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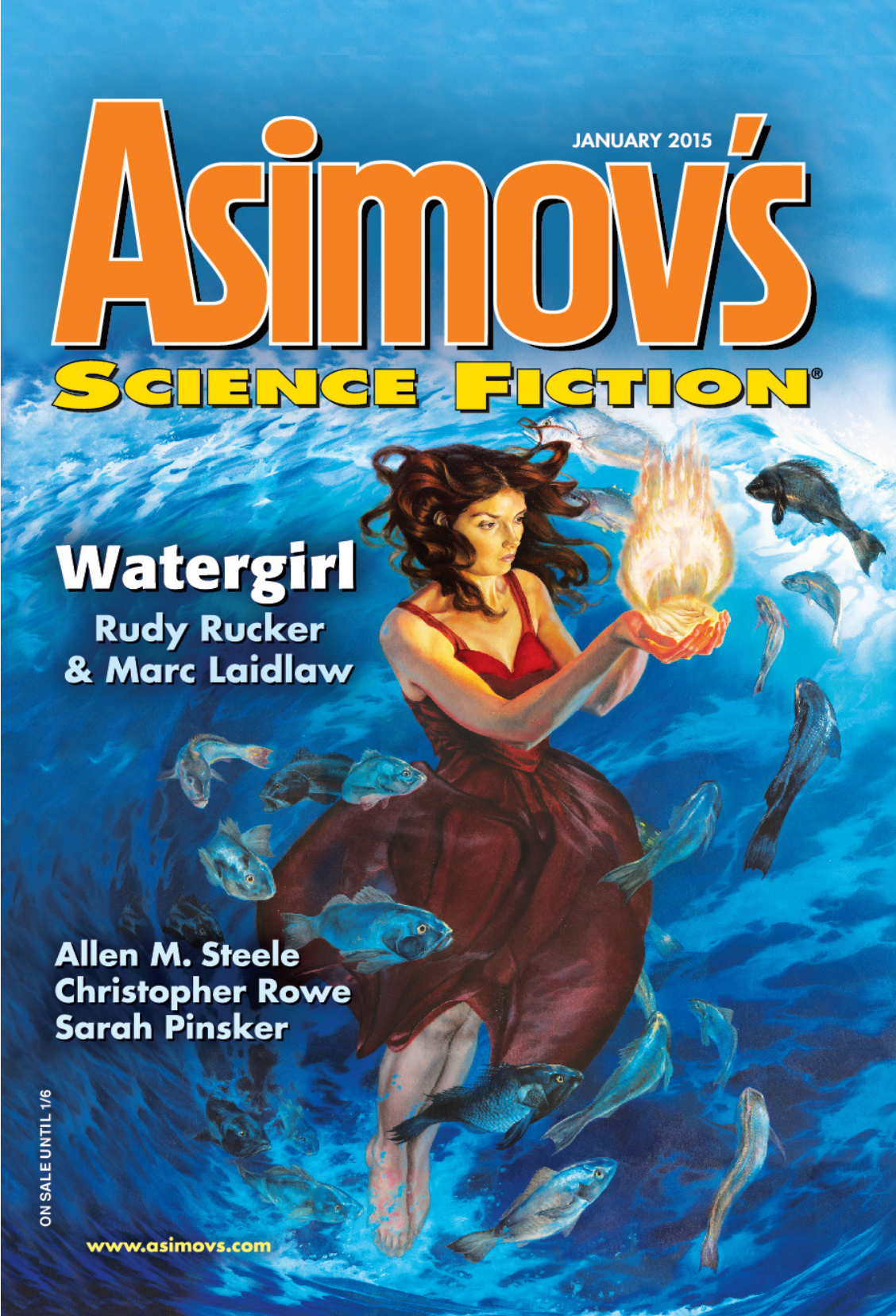
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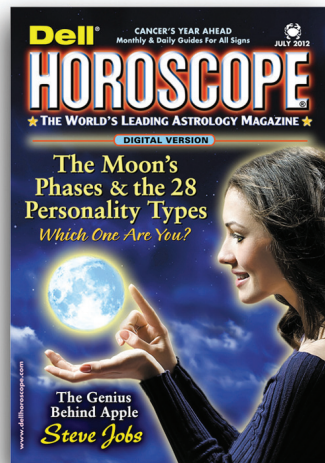
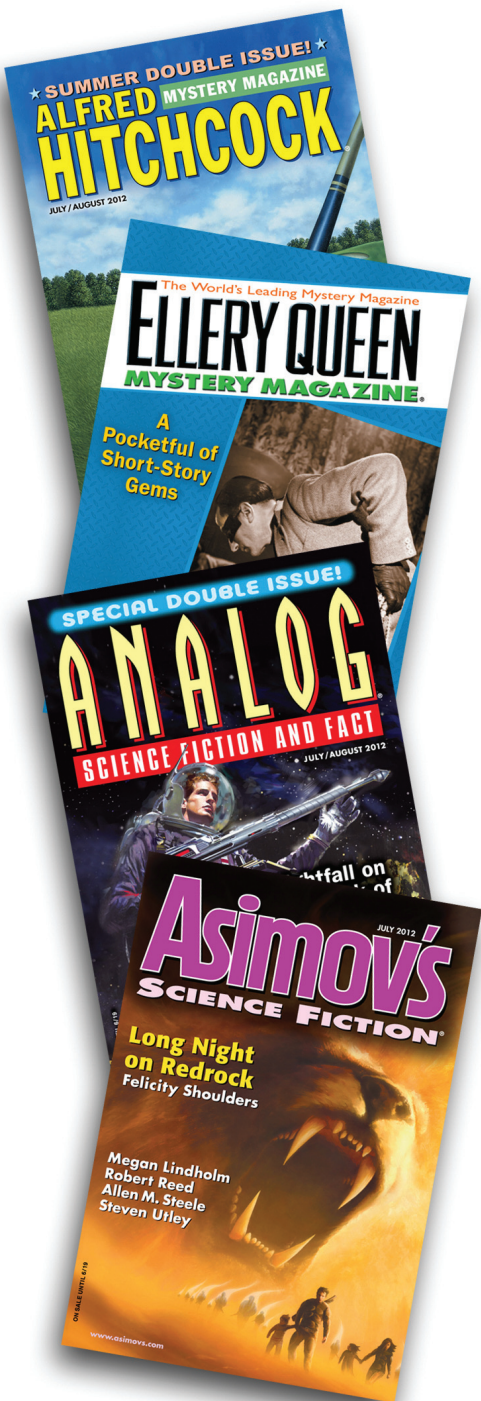
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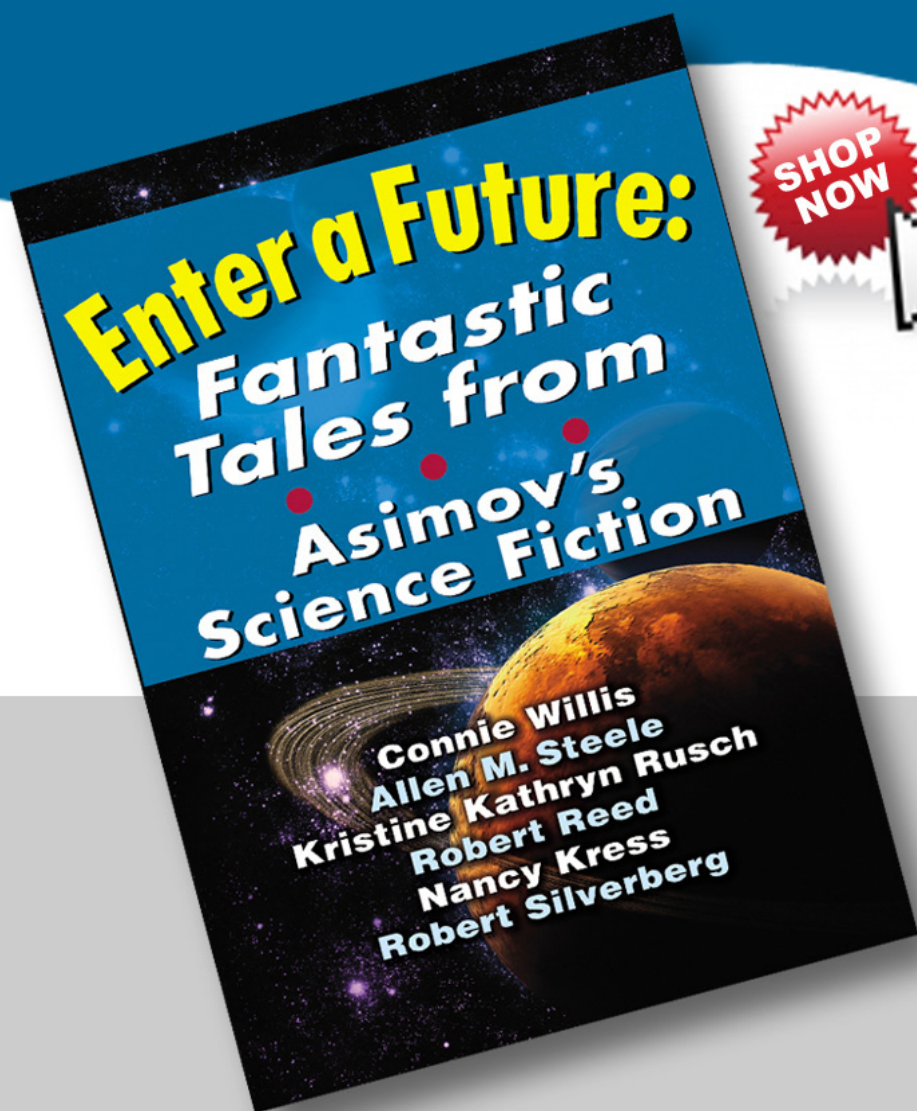
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SCIENCE FICTION

JANUARY 2015

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WHIRLWIND WORLDCON; or SHAMELESS NAME DROPPING

It was not my intention to attend LonCon 3, the 2014 Worldcon, which was held in London this past summer. Although I usually arrange family vacations around Worldcon, we couldn't do that in 2014 because we were already planning to visit the UK in April. Our elder daughter was spending her junior semester abroad at University College London and then returning to the States for a paid summer internship. We couldn't swing two trips to England and we didn't want to take a trip without her. When I drew up the magazine's 2014 budget, I decided my big professional outing would be the World Fantasy Convention in Washington, D.C. WFC is an excellent convention that, like Worldcon, is always jam-packed with authors. Yet, while I wasn't planning on attending LonCon 3, the Universe was conspiring to get me there.

My husband, younger daughter, and I set out for JFK and London on April 11. We checked our luggage and proceeded to security. While on that line, I received a super-secret email informing me that I'd been nominated for a Hugo. The rest of our journey through security proceeded without incident. Eventually, we headed for our gate, only to make the startling discovery that our check-in had been accidentally voided and our seats given away to standby passengers! This plane was the last flight out to London of the night, so while our luggage was happily on its way to Heathrow, we weren't going anywhere fast. Fortunately, the airline admitted its mistake, put us up in a hotel for about four hours, and sent us off on another flight nine hours later. I was traveling with a sick child and a miffed husband, but since we were completely reimbursed for our round trip tickets, he wasn't as miffed as he could have been.

We had a lovely visit with our older daughter as well as with friends from my own junior year abroad at the London

School of Economics. My college roommate, Andrea Duffy, insisted that I should return to the UK over the summer, stay with her in the Oxford area, and then pop off to London for the Hugo ceremony. Andrea had never attended an SF event, but she thought it would be fun to find out what my "HugoNebulas" were all about. Her proposal seemed like a delightful lark that would never happen. But then in late June the airlines engaged in a mini price war and my husband said, "What the heck?" and "Bon Voyage!" So that's how I came to spend roughly thirty hours at the 2014 Worldcon.

From following the fabulous Pat Cadigan's humorous posts on Facebook, I knew that some people were gathering in a bar at the Aloft Hotel. Andrea and I made it to the bar around eight P.M. on Saturday, August 16, just in time to crash the end of a Gollancz party. This did, indeed, turn out to be the place to be. In addition to Pat, we caught up with Robert Reed, Ian McDonald, Alvaro Zinos-Amaro, and many others. A couple of hours later, Andrea and I went looking for something to eat in the ExCel Convention Centre. We ended up dining on take-away Indian food with Aliette de Bodard, Christopher Kastensmidt, and Tracy Canfield.

The next morning we hied our way over to the Dealers' Room, where I introduced Andrea to Tachyon Publications' Jacob Weisman. Andrea quickly purchased a copy of *Asimov's Science Fiction: 30th Anniversary Anthology* from Jacob and then allowed me to escort her on a quick trek around the enormous emporium looking at jewelry, loads of books, and all sorts of SF and fantasy related items. We also managed to pull off a fast-paced fifteen-minute tour of the art show before it was closed for the annual auction. Somewhere in our journey, we met up with Michael Swanwick, who let us know that Kansas City had been successful in

its 2016 Worldcon bid and that he would be the Guest of Honor. I told Andrea that this was sort of like a huge “lifetime achievement award” and we were both exceptionally impressed.

We joined Rick Wilber and James Patrick Kelly while they ate lunch. After that, it was off to the ballroom to rehearse for the Hugo Awards. I was presenting the John W. Campbell Award for Best New Writer and had lugged the plaque with me from New York. All my anxieties about the evening were channeled into trying to pronounce the nominees names correctly. This was especially hard because four absolutely trustworthy sources had given me four different ways to say one writer’s name.

After visiting with last year’s Campbell winner, Mur Lafferty, and the evening’s emcees—Geoff Ryman and Justina Robson—we tore off to a wine bar to meet Kathleen Ann Goonan for a late lunch. This was a relaxing interlude before charging back to the hotel to dress for the evening’s festivities.

At the pre-Hugo cocktail party, I managed to catch up with Connie Willis and her family, meet Aliette’s adorable one-year-old son, congratulate *Strange Horizons*’ editor Julia Rios on her and Moss Collum’s impending nuptials in Gretna Green, and spend a few moments chatting with British editor Malcolm Edwards. Then it was off to the ceremony where I lost the Hugo award to my friend Ellen Datlow.

The Hugo Losers party included short visits with Robert and Karen Silverberg, Joe and Gay Haldeman, Charlie Jane Anders, and Charles Stross. Andrea and I then made our way back to the Aloft bar where we hung out with Kim Stanley Robinson, Michael Blumlein, and Andy Duncan. We staggered back to our hotel room around two A.M. The next morning we said a quick goodbye to John Chu and Fran Wilde who we encountered in the hotel lobby, then set off on a new escapade. Although we missed out on much, Andrea and I had a wonderful time at our whirlwind Worldcon. I am grateful to her and to the machinations of the Universe for the opportunity to attend LonCon 3. ○

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Sheila Williams and Mur Lafferty

THE RICHARD HAKLUYT OF SPACE

In an essay in her collection *The Common Reader* (1925), Virginia Woolf has this to say about her encounter with Richard Hakluyt's enormous compilation of Elizabethan narratives of travel and exploration, *The Principal Navigations Voyages Traffics and Discoveries of the English Nation*:

"These magnificent volumes are not often, perhaps, read through. Part of their charm consists in the fact that Hakluyt is not so much a book as a great bundle of commodities loosely tied together, an emporium, a lumber room strewn with ancient sacks, obsolete nautical instruments, huge bales of wool, and little bags of rubies and emeralds. One is forever untying this packet here, sampling that heap over there, wiping the dust off some vast map of the world, and sitting down in semi-darkness to snuff the strange smells of silks and leathers and ambergris. . . . For this jumble of seeds, silks, unicorns' horns, elephants' teeth, wool, common stones, turbans, and bars of gold, these odds and ends of priceless value and complete worthlessness, were the fruit of innumerable voyages, traffics, and discoveries to unknown lands in the reign of Queen Elizabeth." And she goes on to express the delights that wandering through this immense, centuries-old compendium of geographies offers.

Hakluyt was born in 1552 or 1553 and died in 1616, which makes him an approximate contemporary of Shakespeare's. He studied for the priesthood at Oxford, served awhile as chaplain and secretary to the English ambassador to France, and later became chaplain to Sir Robert Cecil, a key figure at Elizabeth I's court. But his great passion was geography. While at the embassy in Paris he heard French courtiers deriding the English for their lack of maritime accomplishments, a

charge that he knew to be unjust; and he devoted the rest of his life to collecting, editing, and publishing the manuscripts of the bold Elizabethan explorers who even then were carrying the English flag to the most remote parts of the planet. The first edition of his great book appeared in 1589 and filled two fat volumes of closely printed text. But so active were English captains at every one of what John Donne called "the round Earth's imagined corners," that between 1598 and 1600 he produced a greatly expanded second edition, consisting of three even larger volumes. It is, of course, a very rare book today, but it has been reprinted in its entirety twice over the years: a five-volume edition of 1810, the one that Virginia Woolf encountered, and then, in 1903, a twelve-volume set. A new edition is now in preparation.

I have owned the 1903 edition for many years, and often used it for reference in the days when I was writing my own books about early explorers. But I have also dipped into it, now and again, for pleasure. As Woolf indicates, some of it makes dull reading today: Hakluyt tried to include everything relevant to the discovery of the world beyond England's shores, and so we have lengthy listings of latitudes and longitudes, the texts of trade treaties, inventories of ships' cargoes, etc., etc. But many of his sea-captains were splendid writers with a full command of the flamboyant, resonant prose of their era, and their accounts make glorious reading for the armchair traveler—those tales of elephants' teeth and bars of gold, of turbans and silks, revealing for homebound Britishers one realm after another of fabulous and fantastic strangeness. Consider, for example, this typical passage, from Sir Walter Raleigh's account of his voyage to Guiana in search of the gold of El Dorado:

"I never saw a more beautiful country, nor more lively prospects, hills so raised here and there over valleys, the river winding into divers branches, the plains adjoining without bush or stubble, all fair green grass, the ground of hard sand easy to march on, either for horse or foot, the deer crossing in every path, the birds toward the evening singing on every tree with a thousand several tunes, cranes and herons of white crimson, and carnation perching in the river's side, the air fresh with a gentle Easterly wind, and every stone that we stooped to take up, promised either gold or silver."

The books provide many such vivid descriptions. Hakluyt's adventurers tell of voyages to China, Japan, Siam, Ceylon, Java, Peru, Mexico, Persia, Africa, Virginia, Florida, Sumatra, and just about anywhere else a sailing ship could reach. They enter the Canadian Arctic in search of the Northwest Passage to the Orient, they boldly go into the ice-choked seas that lead to Antarctica, they visit the courts of the Turkish sultan and the Russian tsar. In a way, the Hakluyt books provide the sort of imaginative stimulation that the best fantasy or science fiction gives us nowadays. Narrative after narrative has the magic and mystery that we hope to get from some richly descriptive fantasy novel or some haunting depiction of the far future of Earth. For someone willing to wade through those pages of latitudes and longitudes in search of the rubies and emeralds and sacks of spices, Hakluyt's *Principal Navigations* has much to offer. The poets and playwrights of Hakluyt's own era ransacked the books for lively images of the exotic: the pages of Shakespeare, Ben Jonson, Michael Drayton, and many others are studded with imagery borrowed from Hakluyt's voyagers. But it is not primarily their considerable literary appeal that leads me to think of the great Hakluyt compilation as having relevance for our modern world in general and readers of science fiction in particular. You will note that among the elephants' teeth and unicorns' horns and other exotica Woolf

speaks of, so prosaic a commodity as wool is mentioned. And, in fact, though Hakluyt loved a good tale of strange lands as much as anyone, and included plenty of them in his book just for the sheer pleasure of it, his primary purpose in compiling these volumes was to stir interest in maritime trade, and in particular trade in humble goods like cloth and tin and blue dye, not in the horns of unicorns. He was, at heart, a propagandist for English commerce, eager to stir the brave young men of his native land to go forth in search of new markets for English goods and new raw materials for English factories. His first book, *Divers Voyages Touching the Discovery of America* (1582), was an assemblage of documents concerning English colonial expansion in North America; and his "Discourse of Western Planting" (1582) was an attempt to secure support for the colonization of Virginia, pointing out that such settlements as Sir Walter Raleigh's Roanoke colony would, in time, provide markets for English cloth and an outlet for England's surplus population.

Such work led, eventually, to his majestic *Principal Voyages*, the endless volumes of which displayed the full panoply of continents that lay ready for exploitation by British mariners and British merchants. They contain everything and anything relevant to his purpose, and a good deal that is not; the first volume, for example, opens with an account of the (mythical) conquest of Iceland and Norway by the (mythical) King Arthur in A.D. 517, and goes on from there to report the Arctic explorations of a Norman named Ochter in the year 890; but soon we have an account of commerce in the English Channel at the time of William the Conqueror, and other information about European trade. And then, suddenly, Hakluyt prints the text of the lengthy narrative of John of Plano Carpini, an Italian monk whom Pope Innocent IV sent as an ambassador to Kuyuk Khan, the grandson of the fearsome Genghis Khan, in the hope of obtaining Mongol aid in the Crusades. It is full of fascinating detail about Mongol customs and history, but what purpose it

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Best Novel

Ancillary Justice

Ann Leckie

Best Novella

"Equoid"

Charles Stross

Best Novelette

"The Lady Astronaut of Mars"

Mary Robinette Kowal

Best Short Story

"The Water That Falls on You
from Nowhere"

John Chu

Best Related Work

"We Have Always Fought:
Challenging the Women, Cattle
and Slaves Narrative"

Kameron Hurley

Best Graphic Story

"Time"

Randall Munroe

Best Professional Artist

Julie Dillon

**Best Dramatic Presentation:
Long Form**

Gravity

**Best Dramatic Presentation:
Short Form**

*Game of Thrones:
"The Rains of Castamere"*

Best Editor, Short Form

Ellen Datlow

Best Editor, Long Form

Ginjer Buchanan

Best Semi-Pro Zine

Lightspeed Magazine

Edited by

John Joseph Adams, Rich
Horton, and Stefan Rudnicki

Best Fanzine

A Dribble of Ink

Edited by Aidan Moher

Best Fancast

SF Signal Podcast,

Patrick Hester

Best Fan Writer

Kameron Hurley

Best Fan Artist

Sarah Webb

**John W. Campbell Award for
Best New Writer**

Sofia Samatar

BILLIONS AND BILLIONS

"Well, let's get on with it. I want you to build me a Moon ship as quickly as possible."

Ferguson threw one leg over the arm of his chair, took out a pen knife and began grooming his nails. "You say that like it was an order to build a privy."

"Why not? There have been theoretically adequate fuels since way back in '49. You get together the team to design it, and the gang to build it; you build it—I pay the bills. What could be simpler?"

—from "The Man Who Sold the Moon" by Robert A. Heinlein

Heinlein

In 1950, **Robert A. Heinlein** <heinlein.society.org> published a collection called *The Man Who Sold the Moon*. The stories in the book were part of what **John W. Campbell** <sf-encyclopedia.com/entry/campbell_john_w_jr> had dubbed Heinlein's **Future History** <nitro.syncretic.com/rah/fhchart>. The title story of the collection concerns the obsession of one D.D. Harriman, a millionaire back when a million was real money, who decides that he is going to the Moon. In order to do this, he decides to start his own private space program in the aftermath of a catastrophic explosion that destroys humanity's only satellite and the rocket shuttle that services it.

Heinlein's *Future History*, hailed as one of the signal achievements of the **SF Golden Age** <sf-encyclopedia.com/entry/golden_age_of_sf>, has not held up over the years. This is not surprising, since it is the fate of all science fiction to be overtaken by events. Not only are his timelines off and his technology creaky, but

his future society reads as anachronistic, especially with regard to its economics and sexual politics.

Heinlein himself wrote in his preface, "The stories in this and later volumes of the series were not written as prophecy nor as history. . . . They are of the 'What-would-happen-if—' sort, in which the 'if,' the basic postulate of each story, is some possible change in human environment latent in our present day technology or culture. Sometimes the possibility is quite remote; sometimes the postulated possibility is almost a certainty, as in the stories concerned with interplanetary flight." Heinlein, who died in 1988, lived long enough to see men walk on the moon, live on satellites, and ride space shuttles.

But none of these accomplishments was simple. And cheap interplanetary flight for the masses is by no means a certainty. Indeed, one might say that the problem with Golden Age SF for modern readers is that so many of its greatest talents consistently underestimated how quickly their world was changing and how complex the future would become.

barons

Sixty-four years after publication of D.D. Harriman's entrepreneurial adventures, humanity finds itself with a robust fleet of robots ranging throughout the solar system but a tenuous human presence in space. The **Space Shuttle** <nasa.gov/mission_pages/shuttle/main/index.html> program ended in 2011 and NASA has yet to come up with a **replacement** <parabolicarc.com/2013/08/16/orion-review>. The clock is ticking toward a scheduled deorbiting of the **International**

Space Station (ISS) <nasa.gov/mission_pages/station/main/index.html#U44F-SiSKpB> in 2020 (or perhaps 2024 if our partners agree to prolong its life). A much less ambitious Chinese station is planned. But in the spring of 2014, Russia annexed the Crimea and attempted to destabilize neighboring Ukraine. After the Obama administration imposed economic sanctions, Vladimir Putin's government retaliated by announcing it would **ban export** <space.com/25876-russia-rocket-engines-american-spaceflight.html> of the Russian made RD-180 rocket engines, which power the Atlas 5 rocket, essential to US military capabilities in space, and **pull out of its collaboration** <reuters.com/article/2014/05/13/ukraine-crisis-russia-usa-idINL6N0NZ4EA20140513> on the ISS. This raises the possibility that American astronauts would have no way to get to the ISS. As I type this, it remains to be seen whether any or all of these threats will be carried out, but clearly there is trouble brewing in space.

All of which makes Heinlein's characterization of D.D. Harriman seem prescient indeed. Because if there is an upside to the income inequality that is slowly eroding our confidence in capitalism, it is that some of our billionaires have decided to pour their own money into the void left by government parsimony and start private space ventures. Consider, for example, **Elon Musk** <forbes.com/profile/elon-musk>, 169th richest person in the world and co-founder of PayPal, who has started **Space X** <spacex.com>. Or **Paul Allen** <forbes.com/profile/paul-allen>, 57th richest according to *Forbes* and co-founder of Microsoft and his **Stratolaunch Systems Corporation** <stratolaunch.com>. Then there's **Jeff Bezos** <forbes.com/profile/jeff-bezos>, 20th richest and founder of Amazon as well as the mysterious **Blue Origin** <blueorigin.com>. **Sir Richard Branson** <forbes.com/profile/richard-branson>, 303rd richest and founder of the Virgin Companies, wants to take you for a ride on **Virgin Galactic** <virgingalactic.

com>. **Robert Bigelow** <forbes.com/forbes/2011/0627/features-robert-bigelow-aerospace-real-estate-cosmic-landlord.html>, not quite a billionaire at \$700 million net worth but nevertheless comfortably well off as founder of the Budget Suites hotel chain, wants to book you a room in orbit with **Bigelow Aerospace** <bigelow-aerospace.com>. Meanwhile a group of One-Percenters, **Larry Page** <forbes.com/profile/larry-page>, 18th richest, **Eric E. Schmidt** <forbes.com/profile/eric-schmidt>, 152nd richest, and **Ram Shriram** <forbes.com/profile/kavitark-ram-shriram>, 996th richest, all of Google fame, along with **Charles Simony** <charlesinspace.com>, unranked by *Forbes* but still worth at least a billion, who oversaw creation of Microsoft Office, and **Ross Perot, Jr.** <forbes.com/profile/h-ross-perot-jr>, 1012th richest and chairman of the Perot Group, are funding **Planetary Resources** <planetaryresources.com>.

private space

So what marvels do our real life D.D. Harrimans propose?

Sir Richard Branson will sell you a ticket to space this afternoon for a mere **\$250,000** <virgingalactic.com/booking>. Over 700 would-be astronauts have already ponied up for a ride in **SpaceShipTwo** <virgingalactic.com/overview/spaceships>. Actually, there will be a fleet of these six-passenger suborbital spaceplanes that will be launched from a carrier aircraft at altitude and then rocket tourists to about 110 kilometers above the Earth. Regular flights are scheduled for 2015 and will last about two and a half hours; however, only a fraction of that will be in space. SpaceShipTwo was based on technology proven by SpaceShipOne, which won the **Ansari X-Prize** <space.com/403-spaceshipone-wins-10-million-ansari-prize-historic-2nd-trip-space.html>.

The Stratolaunch strategy for putting a vehicle in space is like that of Virgin Galactic in that it's based on an air-launch to orbit strategy. This is not surprising

insofar as one of Stratolaunch's major players is **Burt Rutan** <burtrutan.com>, one of the builders of SpaceShipOne. The prototype of the **carrier aircraft** <stratolaunch.com/readmore_scaled.html> resembles that of Virgin Galactic, except that it's bigger. Much bigger. In fact, when it rumbles down the runway in 2016 it will be the largest airplane, by wingspan, ever to fly. Unlike Virgin Galactic, however, it will carry a **multi-stage booster** <<https://www.youtube.com/watch?v=YgJFKUiuDBE&feature=youtu.be>> capable of delivering payloads and people to both low and high earth orbits. The inaugural flight will be in 2018, if the current timetable holds.

Unlike Stratolaunch and Virgin Galactic, Blue Origin is focused on a rocket-powered vertical takeoff and landing strategy. Its **New Shepard** <blueorigin.com/about> vehicle, currently under development, features a reusable Crew Capsule and Propulsion Module to reach suborbital space. There has been a successful test firing of its BE-3 engine <aviationweek.com/space/blue-origin-demos-new-shepard-mission-engine-cycle>. Coming at some point will be a larger booster to lift a "**Biconic Space Vehicle**" <space.com/15406-blue-origin-private-spacecraft-infographic.html> to orbit, although the specifics of this technology or a timetable for its deployment are not forthcoming. But if there are any rocket scientists reading this, **Blue Orbit is hiring** <blueorigin.com/careers>.

Once you get to orbit, where are you going to stay? Hotelier Robert Bigelow has an idea: how about an **inflatable space station** <space.com/19291-inflatable-alpha-station-bigelow-aerospace.html>? His company is pioneering designs for flexible and expandable space habitats. With successful proof-of-concept launches of **Genesis I and II** <space.com/4007-bigelow-orbital-module-launches-space.html>, Bigelow announced the development of the **BA 330** <bigelow aero space.com/ba330.php>, suitable for occupancy by six humans, which can function as an independent space station, or

can be connected together with other modules to create a larger orbital space complex. A BA 330 module could be built by 2017 and launched on SpaceX Dragon spacecraft if there were a customer willing to foot half the costs.

Planetary Resources, Inc., aims to **mine the asteroids** <gizmag.com/planetary-resources-asteroid-mining-video/22298> for water and precious metals, using robotic satellites and spaceships. In the near term, their **Arkyd series of robots** <planetaryresources.com/technology> will be deployed to low earth orbit for imaging of earth resources and searching for suitable asteroids. To turn a profit, Planetary Resources will have to produce robots that can not only find resources but **capture and extract them** <astronomysource.com/tag/arkyd-series-200>, and perhaps even move asteroids to more convenient locations.

Of all these startups, however, it is SpaceX that is closest to putting cargo and passengers into orbit. In 2008, its **Falcon 1 rocket reached orbit** <space.com/5905-spacex-successfully-launches-falcon-1-rocket-orbit.html>. In 2010, it launched its **Dragon** <spacex.com/dragon> spacecraft using the Falcon 9 to orbit and landed it safely. In 2012, an uncrewed Dragon docked with the ISS, and in **2014 delivered cargo to the ISS** <space.com/25566-spacex-dragon-easter-delivery-space-station.html> as part of a resupply contract with NASA. While the Falcon 9 is an expendable two stage rocket, Elon Musk, whom pundits are calling the modern Thomas Edison, is committed to developing reusable launch systems.

exit

Ten of the very richest men ever founded six different companies, all with ambitious projects that in Heinlein's day would have been unadulterated science fiction. Several of them are of an age that it is conceivable they read Heinlein, as I did, when they were kids, maybe even picked up his collection of Future History yarns. Can we detect his influence? We hear all the time from **scientists and**

engineers who admit to being inspired by works of science fiction

<<http://eandt.theiet.org/magazine/2013/08/debate.cfm>>. Why not venture capitalists and entrepreneurs? Of course, there is no way of telling, unless maybe one of them happen to be an Asimov's subscriber and wants to drop Sheila a line. We'd love to hear from you! But whether this quirk of history is a coincidence or not, the question arises: Are they in it for the glamour or the gold?

In Heinlein's story Harriman has it both ways. He is clearly obsessed with space in general and the moon in particular and seems willing to take risks to get there that might jeopardize the future of his enterprise. But he is also blessed with the luck that comes with an

upbeat plot. His fellow entrepreneurs are a more sober lot and rein him in when necessary, even as his Moon ship's technology problems get handwaved away. Heinlein wants us to admire Harriman as a visionary who will let nothing keep him from his goal and, as author of his story, rewards him with financial, if not personal, success. We, who still hope for a future for humanity in space, can only hope that our own billionaires have some of the same Right Stuff.

"Sometimes I think he's [D.D. Harriman] the last of the Robber Barons."

Dixon shook his head. "Not the last. The last of them opened up the American West. He's the first of the new Robber Barons—and you and I won't see the end of it."

—"The Man Who Sold the Moon"○

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THE UNVEILING

Christopher Rowe

The sky was the color of a robin's egg, and like a robin's egg it was mottled and imperfect. Ash from Old Vice's constant low-grade eruptions mixed with the complex hydrocarbons of industrial smokes—the word “pollution” was forbidden by gubernatorial edict—with the effluvia of the thousands of transports uplifting daily to low orbit, and even with naturally occurring clouds, high scudding cirrus following the wake of the continental jet stream and low, ominous thunderheads piling up in the sunset west.

It was these last that attracted Tayne's attention as his crew worked to scour bird droppings and other, less clearly identifiable grime from the pedestal supporting a statue of some hero from the last war. The statue, and a dozen others that were more or less identical to Tayne's eyes, was set atop the tor overlooking the seaport. Another, just upslope and concealed under roped-down tarps, was to be dedicated the next day. The whole sculpture garden had to be gleaming for the dignitaries who would be in attendance for the speeches and the drinking.

Lizane walked up, returning from the crew's van burdened with another bulky canister of the muriatic acid they were using to clean the monuments. She followed his gaze west to the clouds and spat to one side. “Rain'll just bring grit,” she said. “We'll be out here in the morning doing this all over again.”

Precipitation on Castellon was never clean. In the howling winters, the snowflakes formed around cores of ash and fell grey instead of the white of other, cleaner worlds. Castellon hail melted away to leave toxic sand dusting the roadways and rooftops, and Castellon rain, stinging more from its chemical content than from its tumultuous fall, left behind a thin patina of slick brown sludge that coated everything it touched.

“Work order is to clean these up tonight,” he said. “We're down waterside in the morning moving freight.”

Lizane curled her nose. “Freight,” she said. “You mean we'll be loading a garbage scow.”

Tayne's crew was free-floating and unspecialized. They reported to a municipal hall at the beginning of every six-day workweek, where Tayne received a list of jobs that needed doing, inevitably dirty and sometimes even dangerous. The work didn't pay enough for lodging any better than a room in the city dormitories downwind of the fish packing plant, but it paid just enough for a few drinks at week's end, and most of Tayne's crew lacked the imagination or drive to want anything more than that.

As for Tayne himself, well, he'd wanted more once. But now, in his early forties, he'd learned to settle for what he had. As he usually did when melancholy overtook him, Tayne ran his hand through the fringe of graying black hair on the back of his head. Thick as the calluses on his fingers were, he could still feel the diamond-shaped scar there.

He realized Lizane was still standing next to him, expecting a reply. "At least tomorrow's Sixthday," he said. "Just half a shift in the stink."

But it wasn't to be just the six hours of work a half shift would have required. As Lizane had more or less predicted, an automated call came over the vox an hour before dawn, letting Tayne know that his crew was needed back up at the statuary garden and that their hours shoveling on the docks were pushed to after the meal break.

"It's overtime, anyway," he told each of his crew members in turn when he reached them. For one or two, this meant a call over the vox to the same sort of communal hall phone that word had come to him by. For most of them, though, it meant rousting them out in person from the bunkhouses along the river, enduring the curses of a dozen or a hundred others housed in the warehouse-like barracks. Tayne made it a point to learn the favored bunks of all his workers for days just like this, when he had to pick his way through the dark and dank to find them and tell them of a change in the schedule.

He made it a point, too, to know where to find the last few, Lizane among their number, who refused to bed down in the communal bunkhouses for reasons they hadn't shared with Tayne. So with just a half hour left before he should be starting the van at the muster point, he found himself walking a narrow alley full of cardboard squats and canvas lean-tos, his jacket open to show he wore the garb of a laboring man, his hands held wide to show he carried no weapons.

He found Lizane already awake, brewing something foul-smelling in a tin coffee pot over a grate laid across a cut-off drum. Ashes spilled out around the corroded drum's bottom rim where it rested on the rotted asphalt of the alley, telling Tayne that it had been used as a fireplace for a long time.

Lizane was squatting, sitting on her heels, chewing on a ration bar. She didn't look surprised to see him and mutely offered him a cup of the black stuff she poured from the coffee pot. He shook his head.

"It's like you said," he told her. "Back up to those statues."

She nodded and drank. "No garbage scow?"

Tayne took a careful squat himself, mindful of putting a hand down on the filthy ground. "Docks in the afternoon. So, overtime."

Most of the others on the crew had greeted this news with grumblings. They could all use the extra scrip, but the way payroll was managed for municipal contractors they wouldn't see it for weeks. For today, it just meant no afternoon off, which meant being too exhausted, probably, to have much of a Sixthday night.

Tayne didn't think Lizane ever had much of a Sixthday night. She just shrugged and leaned back, hooked her jacket out from a pile of clothing in the closest lean-to. The pile moved and growled, and Tayne caught a brief glimpse of the scar-faced man Lizane lived with. She'd never mentioned his name, and Tayne had never asked.

* * *

The van wouldn't start.

"It's the fuel cell again," said Hap. Hap, tallest in the crew, skinniest and most nervous, had somehow once again won his way into the passenger seat in the complicated game of thrown fingers the crew used to determine who rode up front with Tayne. The game was supposed to yield random winners, but Hap won far too often for true randomness, and for Tayne's taste. Hap talked too much to be a welcome companion in the forward compartment early mornings.

"Fuel cell's charged," said Tayne, but he knew that Hap meant the worn coupling that connected the cell to the intake pump was fouled again. Tayne sighed. "Tell the others what's going on."

For all that the van's systems were supposedly designed for easy use and maintenance, the fuel cell coupling was perversely hard to get to. Tayne had the choice of either using the balky hydraulic jacks built into the undercarriage to raise the front of the van clear off the garage floor or half-clambering into the engine compartment and leaning in to work from the top. If he did the latter, he would be working by feel alone, because there was no line of sight to the coupling from above.

He remembered the last time they'd used the jacks, when they'd thrown a track crawling up one of the seaport's older cobbled streets. A seal had blown on one fully extended jack, spraying everyone with hydraulic fluid, and the bulk of the van had settled down onto the street, Lizane barely scrambling out from beneath in time to avoid being crushed.

He decided to work by feel.

So they arrived at the statuary garden an hour later than scheduled, all of them anxious to make up the lost time, no one wanting to be shoveling aboard a scow when the evening tide came in and the deck started bucking with the waves. As they pulled through the ornate iron gate, Tayne looked over at the pair of marble statues, winged warriors of some kind, flanking the entrance. These were the ones they'd spent the most time on the day before and had left gleaming. They were still gleaming, all right, not from the crew's polishing job but from the slick coat of brown sludge that the thunderstorms had draped over the city. Tayne felt a headache building from the amount of work that lay ahead.

"Somebody else is here, boss," Hap said, pointing toward the top of the garden.

A personal transport was parked haphazardly across the gravel lane running below the tarped-over statue. The running panels of the transport were ostentatiously white and the vehicle had obviously not been parked out of doors the night before. Everything about it spoke of wealth and privilege.

"Can only mean trouble, right, boss?" said Hap.

Tayne answered with a noncommittal grunt, even though he agreed. He eased the van into the same spot beside the maintenance shed they'd used the day before and set the brake. "Get everybody out and going," he said. "Start with those angels or whatever they are, closest to the gate. If I'm not back when they're done, do whatever Lizane says."

He considered digging out some hand cleaner from the van's supply bay before he walked up to the transport, but then decided not to take the time, despite the fact his hands were filthy from cleaning out the coupling. He figured the car's occupant was probably somebody from the municipal authority and so unlikely to offer to shake his hand anyway.

He was proven wrong on both counts.

A slightly built older man, dressed in a smart morning coat over the twill one-piece of the artisan class, was on his knees at the base of the new statue, making a poor job of untying the ropes that held down the tarps. His fine clothes were covered with

the muck running off the canvas, and when he looked up at Tayne the man even had a smear of brown running from his creased forehead back over his pale, bald pate.

The man's thin face lit up with a broad smile when he saw Tayne. "I mean no offense, sir," he said, "when I tell you that you look like someone who's better equipped to get this piece uncovered than I am."

The voice was as unexpected as everything else about the situation. The man's accent wasn't just cultured, it was offworld cultured. Maybe even Earth cultured.

Tayne said, "Our work order is for cleaning all these others. That one was covered up pretty well—it's probably fine."

When he said "our" the other man furrowed his bushy white eyebrows and peered myopically down the garden. "Look at that. There's a whole gang of you."

"Gang" meant something very specific in the port, and Tayne winced. "We're a civic work crew, sir," he said, deciding that the man was definitely an offworlder, or at the very least new to the city. "We've got a ticket this morning to get the garden cleaned up for . . ." he hesitated, trying to remember if the work order had used some official-sounding word for the afternoon's ceremony. "For the unveiling," he finished awkwardly.

"Well, that's fine," said the old man. "Though to be perfectly honest, most of these pieces won't be particularly improved by cleaning. A lot of dreary, pompous, celebratory stuff, isn't it? Unexamined patriotism bordering on jingoism, that sort of thing?"

Tayne worked a minute to unpack what the man had just said. After a moment, he said, "They take sedition pretty seriously around here, sir."

The man waved that off and picked at the mess he'd made of the ropes' master knot. "I've said worse and they still hired me for this commission," he said. "And back to what I was saying, you'll surely agree that it's most important that *this* piece be clean and ready? Can't we just have a peek to make sure none of this filth got through the wrappings?"

Tayne glanced back down at the gate and saw that Lizane had the crew divided into two teams, tackling the angels. She'd assigned them exactly as he would have, splitting up people who couldn't stand each other and people who got along *too* well, preventing fights before they started, and lollygagging as well.

He unsnapped the cover of the holster at his belt where he kept his multi-tool and pulled it out, unfolding the utility blade. He nodded at the ropes and said, "That's not going to get untangled anytime soon."

Grasping his intentions, the old man smiled again, and said "The Alexandrian solution, excellent." Then he hesitated and added, "Alexander the Great. An old general who found a knot that couldn't be untied in a place called Phrygia, and so he—"

Tayne kept his utility blade sharpened to a very keen edge. He sliced through the ropes with a single pass. "I know what the Gordion Knot was," he said, interrupting the man. "Even laborers on Castellon go to school. Until they're sixteen, at any rate."

The old man pursed his lips. "They must be very excellent schools," he said.

Tayne shrugged and began pulling the tarps down. "Not really. But the libraries are all right."

The sculpture was of the previous governor, a woman who had ruled Castellon, its moons, and its outlying stations when Tayne was a boy. She was remembered for putting down a rebellion on the western continent, for reforming the tax code, and for patronizing the arts. At least that's what it said on the bronze plate bolted to the base of the statue. Tayne mainly remembered her for the draconian anti-gang policies that had been enforced during the later part of her administration. He touched the scar on the back of his head again as he gazed up at the outsized marble face three meters above.

"I suppose it's a good enough likeness," he said.

The old man tutted. "Hardly the point, sir, but thanks nonetheless."

Tayne looked over at him. "What *is* the point, then?"

The old man drew himself up and an arch look came to his face. He opened his mouth to speak, but then suddenly deflated and smiled again. "The point, sir, is unexamined patriotism bordering on jingoism, as we established earlier. Which is what pays my bills and leaves me time for my own work. I knocked this out in two weeks, if you must know."

Tayne knew all about makework, about doing things just to pay the bills. "Why are you out here this morning, then?" he asked. "Why do you care if a little rain got onto this statue before the mayor and the rest of them see it?"

The man, Tayne supposed he should think of him as the *sculptor*, didn't immediately answer. He was slowly circling the plinth the statue stood upon, kicking his way through the fallen canvas. He stopped on the upland side, opposite of where Tayne stood, and said, "This. I'm out here this morning checking for something like this."

Curious, Tayne circled up to stand behind the sculptor, keeping clear of the tarps. The old man was pointing up at a black rune scorched into the marble at the base of the statue. It almost looked like a brand had been burned into the governor's marble foot.

Tayne recognized the rune. "Security services," he said. "That just means they've checked the statue out for . . . for I don't know what, really. But I suppose there are going to be a lot of important people here later."

The man turned to face Tayne. He had an unpleasant sneer on his face now. "Important people, yes. Well, that's relative." He reached up and ran his fingers across the rune. "A literal stamp of authority," he murmured. "How unimaginative."

Tayne supposed the man was upset about what could be seen as a defacement of his work, but, "Why do you care? You said this was a knock out job, didn't you? They won't pay you any less just because some arbitrator in Customs followed some regulation."

The old man threw a sharp look at Tayne, but then smiled again. Tayne was starting to wonder just what the smiles meant. "'Customs,'" he said. "Because you know that this piece, and me, its maker, must have come from offworld. And I took such trouble to adopt the appropriate dress." He swept a hand down and out, displaying his artisan's wear. "But of course," he continued, "I haven't been here long enough to pick up the subtleties of the local argot."

Tayne said, "You've got a lot more work to do than just changing clothes and mimicking an accent if you want to pass for a local. You don't act anything like Castellon-born. You're too clean, for one thing. Even the quality people have ash in their skin here. It would take you years to pass."

The sculptor nodded. "Years I don't have, alas. I'm only here a few days. Just long enough for this ridiculous ceremony. Though I hope to see the famous volcano, of course."

Old Vice was a hundred kilometers inland from the port, part of the coastal mountain chain that separated the city from the sparsely inhabited interior. The caldera was said to be spectacular, the largest on any world, and flights over it were a popular, if dangerous, activity. Tayne didn't know anyone who had ever taken such a trip, though he'd once seen the volcano from a distance, back when he first hired on with the municipal authority, years before. One of the very first jobs he'd ever drawn was a scheduled maintenance check on the funicular that ran up to a civil guard post overlooking the port from a nearby peak. It was still the farthest Tayne had ever

been from the city proper, and he'd never forgotten the views inland across the mountains, and out across the alkaline ocean.

"They say it's something to see," Tayne told the man. "Look, I need to get back to my crew, and we should probably cover your statue back up. If it's going to be unveiled later then I'm guessing it's supposed to be veiled when the dignitaries get here."

The old man waved a dismissive hand. "Don't trouble yourself. The 'veil' will be a silken drop cloth attached to a line. That way, whichever plutocrat is in charge will be able to pull it off in suitably dramatic fashion without the bother of ropes and rough canvas."

Tayne hesitated. "Well," he said after a moment's consideration, "you know more about it than me, certainly. But listen, I can't take responsibility if there's some kind of trouble over it being uncovered now."

Again, a dismissive wave. "Go, go, scrub the muck off all these wastes of marble and granite. If anyone asks, I'll tell them I pulled off the canvas on my own. Just the sort of eccentric behavior one expects from an artist and an offworlder, yes?"

With that, he seemed to lose interest in conversing with Tayne. He pulled a fist-sized tin with a hinged top from one pocket and a broad-bladed putty knife from another. When he opened the tin, Tayne saw that it contained a white spackle the exact shade of the marble statue. Whistling tunelessly, the sculptor set about obscuring the blackened rune.

Clad in rubberized coveralls and heavy boots, wearing respirators that had been in service for too long, the crew loaded steaming garbage onto the scow. Tayne drove a skid steer loader checked out from the port authority, humping up piles of municipal detritus at the edge of the dock that half his crew then shoveled over the railing into the open decked conveyance below. The others were down there, shifting and sorting with pitchforks, making sure that the load was evenly distributed and hoping for the odd piece of salvage, unlikely as that was.

Tayne estimated they were maybe a third of the way through the job when they all heard the explosion roll down over the city.

Tayne lowered the bucket of the loader and cut the power, clambering out of the machine as quickly as he could. Hap and the others working topside came trotting over, pulling off their respirators and babbling to one another.

"Gas main?" asked Hap, speaking to the group in general. Those kinds of accidents weren't unheard of in the city, at least in the parts where the underground mains hadn't been properly maintained in years. The parts of the city where they all lived. But no. . . .

"It was up in the heights," said Tayne, and as he started to put it together, Lizane and the rest from down on the scow topped the dock, climbing up from below along rope hawser netting. He saw the look of fear on Lizane's face and knew that she was making the same guesses he was.

"What time is it?" Tayne asked.

The others looked at one another in confusion for a moment, and Tayne said again, "What *time*?" shouting now.

"Sixteen thirty," said Hap. "Sixteen forty-five, something like that. Why?"

"They were all up there," said Lizane. "They said the governor was going to be there, the mayors of all the settlements, who knows who all?"

Sirens were whining in the distance now, emergency services crews making their way up the hill. A thick plume of yellow and grey smoke rose inland.

"Even if they don't blame us—" Lizane began, and Tayne cut her off.

"We're done, we're all done," he said, thinking fast. He rubbed his hand across the back of his head, thinking about the questioning techniques of the municipal

arbitrators. Thinking that questions from the planetary authorities would be even worse.

"What are you two talking about?" whined Hap. Tayne could see that he wasn't alone in his confusion.

"Fool!" said Lizane. "Look where that smoke is coming from. Think about where we were this morning and why we were there."

Hap looked vaguely toward the column of smoke. "The explosion was in the sculpture garden we cleaned out?" he asked. Then realization dawned on his face. "Gods," he said, "do you think they're all dead?"

Tayne said, "I think we'll find out soon enough. We'll all be put to the question."

"But we don't *know* anything!" said Hap.

Tayne thought about the sculptor. "I do," he said. "I know that none of you saw anything. So when they come, just tell them that. And tell them that you saw me up at the statue with a stranger."

There was a brief moment of silence, then Lizane said. "It won't matter. They'll still take us all in, and those of us with the wrong kind of records . . ."

She meant herself. Hell, she meant him.

"Give me your work chit," he told her.

"Tayne," she said, as soft as he'd ever heard her say anything, but she pulled the chit from where it hung on a leather cord around her neck.

He took it, stalked over to the edge of the dock, and dropped it into the scow. "You weren't at work today," he said. "Who else could I not find this morning?"

The crew looked at one another, figuring their chances. Two others pulled off their chits and handed them over.

"So, go to ground," Tayne told those two and Lizane. "Get out of the city if you can. And if they catch you, just tell them exactly what happened and why. You were afraid of the authorities and I told you to run. Easy, right?"

Lizane was already stripping off her workboots. She spat, "Easy, sure."

"But why run at all?" shouted Hap. "Why would they blame us?"

Tayne said, "Because they'll have to blame somebody. And we're available."

Lizane gave him an intense, unreadable look that Tayne supposed was a kind of goodbye, then she and the other two all headed in different directions.

"The rest of you can wait here or head on home. If I were you, I'd find a bar and enjoy a drink. It'll be the last one you have for a while." Tayne walked over and sat on the bucket of the loader.

"What are you going to do?" asked Hap, as the rest of the crew drifted aimlessly away.

Tayne started pulling off his boots. "I'm going to think up a story," he said.

When the arbitrators came a half hour later, Tayne sneered at them and said, "How many did I get?"

* * *

The scar-faced man climbed down the scaffolding, clearly unfamiliar with the light spin-induced gravity this deep in the station. Twenty or so people were gathered in the dark, confined space, watching him in silence.

Finding a place to stand where they could all see him, he took a long time looking at them each in turn. "Too many," he said. "If you're just one cell there are too many of you. If you're more than one cell you've compromised yourselves."

A lanky bald woman sat up straighter. She wore the implants of a remote operator of a vacuum utility, but had none of the distracted look that operators usually sported. "We're moving to take this station in forty hours," she said. "We're past the point of secrecy. We're ready to join the Free Communes."

The scar-faced man would be off the station in just a few hours. He idly wondered how many of the people he could see would be dead in two days' time. He wondered if they would succeed.

Another woman, this one dressed in the clean lines of an administrative aide, said, "Is she really here?"

There was a clanking noise from above and the scar-faced man held up his hand to help down the limping figure who appeared out of the darkness. Around them, he heard the stationers reverently murmuring her name. "Lizane."

At least they weren't calling her "mother," the way the last bunch had. Mother of the revolution.

Lizane looked at the stationers with a lot more sympathy than the scar-faced man had. She handed over the data drive they'd brought to him, and he, in turn, handed it to the bald woman. "Arbitrator codes," he said, and half the reason they were there was behind them.

Then Lizane drew in a deep breath and started in on the rest of the reason.

"I knew him. I knew Tayne, and I was there the day he started the revolution. . . ." ○

Hard Boot

After my boy bruised and bloodied the nose of yet another kid, I handed him to the cold steel gates where they rewired his mental connections, spooned him applesauce. A week later, he came home sweet,

hugged me, smelling like a newborn. He cleaned his room although wires dangled from his arms. I tucked them inside the RealTM skin and invited the neighbors to meet the prodigal son.

—Trent Walters



Rudy Rucker is a writer, a mathematician, and a former computer science professor. He received Philip K. Dick awards for his cyberpunk novels *Software* and *Wetware*, and an Emperor Norton award for his autobiography *Nested Scrolls*. After publishing some thirty volumes with mainstream publishers, Rucker recently founded Transreal Books and has begun publishing his own books in ebook and paperback. Recent titles include a novel, *The Big Aha*, and an omnibus, *Transreal Trilogy*. Marc Laidlaw is the author of half a dozen novels, from *Dad's Nuke* to *The 37th Mandala*. He is probably best known, however, for his work on the popular videogames *Half-Life* and *Dota 2*. Marc tells us that despite growing up in Laguna Beach, he's more of bodysurfer than a board surfer, although he took some lessons last summer and plans to keep working on it. The surfer dudes in the authors' latest collaboration were last seen in *Asimov's* catching "The Perfect Wave" (January 2008), but knowledge of the previous tale is completely unnecessary for tubular enjoyment of . . .

WATERGIRL

Rudy Rucker & Marc Laidlaw

Delbert was living in a rotting spaceship up a north shore canyon choked with lobster-claw heliconia flowers, gigundo prehistoric-type ferns, dense beds of blooming ginger, insect-like orchids, hau trees, guavas, papayas, breadfruits, and a zillion more kinds of plants, some with thorns sticking out like collars of nails, some with buttressed roots that snaked around like walls. By now Del knew the names of most of them. He liked plants.

The long sloping ravine held a wild, braided stream that came from a high pool with a waterfall. Del would sometimes squeeze into the small roaring space behind the falls, abandoning the lumpy, obstinate fabric of reality, letting the rush of white water beat on his skull like a hail of dreams.

His jungly redoubt was always wet. The rocks and tree-trunks were wrapped, strapped, and festooned by vines, some of the vines with big swiss-cheese leaves, some of them like giant philodendrons. Here in the islands, a humble waiting-room plant could run as amok as a weed-whacked surfari tourist. As amok as Zep had gone a couple of years ago when he and Del had arrived.

After their first bruising day of trying to surf Pipeline, Zep had gotten wasted, had set a local guy's pickup truck on fire, and had implicated Del in the halo of blame,

not that either of them could fully remember the details. They'd spent ninety days in the Oahu Community Correctional Center, sharing a cell, which made it better.

"Didn't figure they'd have *prisons* in Hawaii," Zep had griped. "The Happy Isles."

"We're learning the lay of the land," said Del. "We'll have respect in the line-up when we get out. We'll be criminals."

And indeed, they'd settled into the local scene. Nobody could gainsay the stoke and twitch of the lean, spaced-out Zep, nor could you stonewall Del's fundamental amiability. And of course the brahs were curious about Zep and Del's highly evolved imipolex piezoplastic surfboards—they'd had custody of them while the boys had done their time.

There was some short-lived talk of the two newcomers starting a hyperfuturistic board shop—but there wasn't any kind of north shore tech scene to back them up and, truth be told, Zep and Del were a little fried on high tech. At this point they were happy to be carving it old-school with the north shore brahs, maybe not every day, but often enough to matter.

Del had found work as a gardener at a cluster of funky, unreconstructed vacation cottages near Ke Iki beach. And Zep was a garbage man. Both of them had irregular, semi-voluntary work schedules. Most of the north beach surfers had casual jobs of this type, earning just enough to eke through the summers, lying in wait for the winter waves. Zep and Del made enough for food, for beer and pakalolo, and for maintaining the very pickup truck that Zep had set on fire. They'd cemented their acceptance among the locals by taking the charred but still functional vehicle off the owner's hands.

But finding enough money for *rent* was impossible. You could live here if you were rich. Or if you had family or had very deep roots in the scene, but otherwise . . . Now and then Zep or Del would manage to move in with one of the local crews or, even better, with a woman. So far, however, none of the hookups with the housed had lasted.

Delbert was in the spaceship, and Zep was in an encampment called Banyanland. And they kept their high-tech boards in the back of their whipped-to-shit truck. These weren't the kinds of sticks that anyone would dare to steal. The boards would turn against any rider they sensed to be bogus. Kind of like magic swords.

Del's spaceship had been a prop for a low-budget, unserious SF movie that had been shot here ten or fifteen years ago. *Green Planet Of Death*. Some of the locals recalled having been hired on as extras and garbed as telepathic mushrooms. The spaceship and a half-dozen other funky structures were scattered up along the banks of the canyon.

The remains included Del's ship, plus a collapsed dwelling-pod said to have housed a seductive vegetable-woman, also the remains of a rickety pavilion that had been the "soup kitchen of the ravening Hrull"—who'd supposedly gathered here to devour the intelligent plants of planet Floofna. A mirror-lined cave had been the home of a bluff old beet kahuna, and there'd been a seedy spaceport veggie bar—long since dismantled to decorate the locals' homes. Above the falls, the walled grounds of an ancestral *heiau*, or Hawaiian temple, had been pressed into service as "the congress hall of the talking pot plants." And this had seriously pissed off some locals.

For a wide range of reasons, *Green Planet of Death* had never been fully completed, nor had it achieved any kind of commercial release. But a grainy VHS tape of a rough cut was eternally circulating around the north shore. Delbert and Zep had viewed the tape in one of the local surfers' sandy pads, a garage way the hell out past the east end of the Kamehameha Highway. And that's when Del had gotten the idea of squatting in the remains of the movie's set.

His galactic scout ship was chickenwire and plywood with peeling varnish, and someday his foot would go through the floor. It wasn't the worst place he'd lived in Hawaii, and it was better than Banyanland, Zep's outdoor communal crashpad.

In Banyanland, the resident low-percenters could claim niches for themselves amid the tangles of roots dropping from a banyan grove's mazy branches. It stayed fairly dry under there, and someone had trucked in a couple of picnic tables. But some of the down-and-outers had meth habits and peed in the corners of their own home.

The banyans were between the coast highway and the unpopular Stink Beach—a less than idyllic spot with tepid, shin-deep water made extra-rancid by the runoff from a row of seven grand, recently built, secretly shoddy homes. The houses had fences, and the people in them didn't like Banyanland, but the local officials were lenient toward the homeless. Just about all the locals were, after all, related.

On the February morning that Zep announced he'd found them a new residence and better jobs, Del was driving a giant yellow orb weaver spider from his galactic scout ship while trying not to hurt the spider or get bit. He'd ushered the arachnid as far as his doorsill when Zep's shadow landed on the spider, followed by Zep's bare foot.

"Hey!" cried Delbert. "That spider was my friend!"

"Friends don't let friends befriend friends of completely other phyla." Zep paused, balancing on one leg, peeling the spider off his foot. "Didn't see it there, actually. Think it's got psychedelic venom?"

"Banyanland is taking a toll on you, dude."

"At least I'm still surfing. What are you doing holed up in the jungle instead of at the breaks? Wave season, dude."

Tough question. "It's like I've lost direction," said Del softly. "Like nothing matters. Like I'm getting old. I can't forever be a mindless freak like you."

"Aw, chill. You want direction? Well, get this, we're moving. Gather up that moldy pillowcase that's got everything you own in this world and follow me. I would tell you to make yourself presentable but that might give our new host an incorrect impression."

"What did you find for us?"

"Hollywood Joe," Zep said, and to Del's blank stare: "Have you been living in a spaceship? Joe Bromelian."

"That greedhead developer?"

"Building houses isn't what Bromelian's really about," said Zep. "He made his money doing special effects. Old guy from New Zealand, right? Had a Hawaiian wife. Has a daughter. He started as one of the producers of that busted movie, *Green Planet of Death*."

"My spaceship?" said Del.

"One and the same. Movie never got finished, but it was old Joe's introduction to Hollywood. And then he got into producing those famous water effects. For one of his side projects, he organized that surfing videogame, *The Perfect Wave*."

"Sick play," said Del approvingly.

"A mind-eater," said Zep. "But that's history. Bromelian's into real-world science now. He designed that new Wave Tamer water park in Honolulu—where goobs slide on slosh all day long? And now Joe's kicking his act to an awesomer notch. Waves with minds, dude. Bromelian's learned how to talk to them. And how to goad them into transcendence. Thanks to quantum aether." A tsunami of manic Zep enthusiasm was building.

"And this, uh, Renaissance man, this developer-producer-designer-scientist, he wants to hire us for . . . what?"

"I'll be consulting," said Zep, cracking his worn face in a smile. "I was talking to the dude and his daughter last night. About quantum aether. I was down on Stink Beach, bummed out, grieving, smoking a bone, it's nearly dark, and—"

"Grieving?" said Del. "About what?"

Zep waved off the question, his face twitching. "I'm gonna tell that part in a minute, Del. Don't put me uptight. Right now I'm doing the happy part, okay?"

"Go for it."

"I'm on Stink Beach, and Bromelian is standing in the water nursing this baby fake wave that's about three feet high. A pup, a calf. Just hanging there. Like a little wet tent. And it's nuzzling the man's legs."

"A standing-still wave?"

"More wack than that," said Zep. "The wave calf has a mind. It's at least as smart as a dog, Bromelian tells me. You don't control it like a do-this-do-that robot, see. Instead you simply impart some fluid generalities about what you wish. You speak in a language of ripples."

"Just like our two special surfboards do," said Del. "We pulse out quivers and they build up chaotic effects."

"Yeah, but this is different," said Zep. "Bromelian's waves keep on talking even when he's gone. They're autonomous. As of a few days ago, the waters of Stink Bay and Waimea down the coast are, like, fully conscious. Thanks to three ccs of pure quantum aether that Joe Bromelian decanted into the slarvy foam at his mansion's beach. Obviously you and I need to be in on this. So I laid our credentials on the man—"

"You told him about the time we got the record score on the *Perfect Wave* game? Or about the time we ate it big-time at the San Diablo nuke reactor? Or maybe you talked about your single, sadly incomplete, semester at UC Santa Cruz?"

"You're so *tight*, Del. So unhappy. The fretful hermit. I learned a lot in Loose Cruz. And I'm into numerous on-going research investigations that you're entirely unaware of. So, if you'll just listen, Bromelian and I get into a rap about the Navier-Stokes equations and computational hydrodynamics and Schrödinger's wave equation. The man was thunderstruck when I told him I have an old CAM8 cellular automata chip in my board. And that *your* board is genetically engineered. Our boards will interface perfectly with Bromelian's quantum aetherized waves, no doubt about it. Speaking in ripples. We'll fill a gap in his communication and control."

"He went for all that?"

"Well, his daughter likes me anyway, she's seen me around and we've flirted now and then. Lokelani. She was even friends with Sable. My girlfriend." Zep stopped talking for a minute. His eyes looked tired and sad.

"What?" said Delbert.

"Let me finish the frikkin' happy part, okay? I'm telling you that Lokelani was standing there telling her father to hire me. And Bromelian says why not. Also he likes the fact that I'm so well connected with the Banyanland tribe. I can be, like, an ombudsman."

"A Judas," said Del. "A sell-out. Like a pig wearing a chef's hat."

Zep lashed back. "All high and mighty, Del? Pulling your pud in the woods. Like a senile old man. Snap out of it, little dude. Out of the cave and into the marketplace. Bromelian has room for us to live at his house. And he's got a cook."

"I'll come meet him," said Delbert. "But I'm staying here in my spaceship. Finding my new path."

"There's more," said Zep, his eyes merry again. "You don't realize who Bromelian's daughter *is*. She surfs. You've admired her from afar." And now, lizard-like, Zep stuck his tongue so far out of his mouth that it touched his chin. And then flicked the tongue back out of sight. A heavy-metal salute.

"I tell you, Banyanland's been lowering your tone," said Del. "Daughter, huh? Obviously she's gonna pick me, even if she'd been eyeing you. My board's prettier. I'm more couth. And you're all tied up with that skeezy Banyanland girlfriend of yours—"

"Sable," interrupted Zep, and paused again. "That's the other news I have to tell you. Sable died yesterday afternoon. Ate it on a Waimea wave. Thirty-footer. She was sailing down the curve, and the wave-face gets this pocked look, with a weird

hummock in it, and Sable launches off the bump and into the air, whooping the same way I do, undaunted, and oh god she does a header on the rocks.”

“Dude.”

“Bromelian’s people are cremating her this morning and the Banyanland tribe will be spreading her ashes this afternoon. A paddle-out in Stink Bay. I’ll carry the urn, and you can carry the leis, Del. Sable didn’t have family that anyone knows of. Just a homeless stoner surfer in Banyanland. Don’t call her skeevy.”

“Ow.”

Del put his possessions into his pillowcase and followed Zep down the canyon to the coast road. They drove past Haleiwa to the two-lane Kamehameha Highway, and followed it past Waimea Bay. It was warm and clear with the winter waves booming. The road was full of cars.

Despite the unceasing efforts of mainland developers, many stretches of the north shore weren’t built up at all. And in one such zone, a tangled maze of jungle separated the road from the water. This was Banyanland. Driving his truck that still smelled like a cold, morning-after firepit, Zep put a hand out the window and waved at some toothy specter within the dark, disturbing morass. Sable’s ghost?

Del didn’t want to think about it. Pathetic/heroic as Sable’s death may have been, Del had never much liked her, if only because she’d exacerbated Zep’s recurrent problems with drugs. And, yeah, face it, Del had been maybe a little jealous of Sable for claiming so much of Zep’s time.

Del let out his breath and felt his mood improve once they’d drawn even with Bromelian’s Stink Beach gated community, just beyond Banyanland. The sight of the expensive landscaping gave him a guilty sense of comfort after the Banyanland jungle of drifters and the homeless—whole families were living in there, even with kids, a concept that made Del shudder.

Zep slowed his truck, needing to make a left turn into the gate, briefly scanning for a gap in the endless stream of oncoming tourists. Seeing none, he gunned his mill and fishtailed across the road, sending a cherry-red rental car into a screeching slew. The guard at the gate waved Zep through. Bromelian’s estate was the first of the homes lined up along the water, old Joe’s the biggest McMansion of all. They cruised up the dude’s driveway and onto his spongy, compact lawn.

“Welcome to Hale Broseph,” said Zep.

Even though he loved the canyon above all, Delbert did find the development’s trim and orderly botanical display to be soothing as well. He was, after all, working as a gardener, and he’d grown up in Surf City suburbia. He could hear leaf blowers and weed whackers over the wracking cough of Zep’s truck, and that was fine. But—

“Don’t run into that guy,” he warned Zep. “Isn’t that Dick Chorkly? Bromelian’s gardener?”

“I’ve got him in the sights of my *love gun*,” crooned Zep, keeping Chorkly aligned with the melted lump of metal that had once been his hood ornament. The truck was rolling steadily forward like an icon in a videogame. “Believe me,” added Zep, quite serious now. “Chorkly’s gonna pay.”

Dick Chorkly. He still surfed now and then, if someone was there to watch, but he’d mutated into a grown-up. Del felt an inward shudder, wondering if this were happening to him. Becoming a responsible, reliable man doing chores. As if.

Chorkly was a favorite hate-object for the Banyanlanders, seeing as how he was obsessively, surreptitiously, and illegally axe-murdering and chain-sawing trees that Bromelian deemed too close to his development’s property line. It hadn’t been enough for Bromelian to build himself just the one house—he’d built seven. He owned every bit of the frontage along Stink Bay except for Banyanland. He dreamed

of owning Banyanland and, rumor had it, he dreamed of owning the glorious canyon where Delbert had been squatting of late.

Chorkly's pickup truck, bristly with rakes and clippers, was a common sight on the roads around here. He'd threatened Delbert with a trimmer once, saying he'd come up to the *Green Planet of Death* set and whack Del while Chorkly was bulldozing the site for ultra-deluxe see-twenty-miles ten-million-dollar aeries—assuming Bromelian ever finished straightening out the labyrinthine ever-changing permitting formalities involved in trashing such ancient and pristine land.

The late Sable had been particularly exercised about Chorkly and Bromelian, sometimes setting why-do-you-hate-us bouquets of flowers at the door to the mansion, and sometimes vandalizing the Chork-man's equipment shed—an act that was close to being suicidally brave. Watching Zep's truck roll toward him now, Chorkly stood disturbingly still, holding the whetstone-sharpened machete that he used for trimming plants. He had muscular arms with Tahitian-style tattoos.

Postponing any final reckoning, Zep diverted his truck into the shadows of Mr. Bromelian's mud-colored kahuna-ohana. The roof of the house was fired green ceramic tile, and if any of it came off in a storm there would be an instant death-zone around the place. The layout was like someone's first design fantasy: Cubes and cylinders crammed together without restriction in a digital dream—left to become a builder's practical nightmare.

Zep pointed out a little building two hundred feet away from the big house, tucked among some plumeria. The estate was huge. "That cabana," said Zep. "It's ours if we want it."

"Hm," said Delbert, noncommittal. "How many bedrooms?"

"It's a cabana, dude, not a hotel."

"Let me put it this way then. How many beds?"

Zep grimaced and loped out of the truck in a janky motion.

Chorkly had a few helpers drifting around the vast property. Nearby, a surfer in a tree-climbing belt was sixty feet up a palm tree, trimming it. Death by coconut was a recurring fear of Delbert's, and he was glad to see them being dealt with. Del would have liked to talk to the brah about using that kind of belt, but Zep hooked Del's arm and dragged him around the side of the crazy mansion. There was a door open here, and Zep pulled Del into the cool shadows. He was a little blinded from the sun, but he had an immediate impression of shoddiness: imitation wood floors and fake shells of beams against composition-board walls. An ill-formed spiral staircase wound into a dimness where oversize fan blades creaked.

"Lokelani lives up there," Zep said quietly. "It's just her and her dad in this monster." He stepped forward and called up the stairwell to the second floor.

Delbert heard the metallic snip of clippers behind him. He turned and saw a young woman standing in the doorway.

"Oh, hey, Lokelani," said Zep. "There you are! Thought maybe you were in your room."

"On a day like this?" she said. "Come on outside. I'm working in the garden."

She backed into the fringe of gardenia-fragrant plumeria trees that grew around the house, clippers in hand. She was divinely beautiful, half-Polynesian, with a lively mouth and a model's cheekbones. Del realized he was staring.

"What you boys up to?"

"Oh yeah, this is my brah Delbert. One I told you about."

"I've—I've seen you out at the break," Del told Lokelani, transfixed.

Thanks to her mixed ancestry—or thanks to dye-lice—Lokelani had blonde hair that the sun and sea had rendered even blonder. She had the sort of deep, full-body tan that only life in the open tropical air could engender. Back in Surf City, a winter tan meant a pink blush on the bits of skin that stuck out of a wetsuit. Lokelani's

bushy white eyebrows gave her a startled expression that contrasted with her narrowed eyes and skeptical smile.

"Dad's down at the water with the new calves," she said. "Gotta get back to my snipping here. You'll be in the paddle-out, right? In half an hour."

"I love plants," blurted Delbert. He wanted to keep the conversation going. "There's a lot of them where I live. Up a canyon."

"That's nice," said Lokelani, as if talking to a child. And now, in a more practical tone, "What I'm doing here is making plumeria flower leis for Sable. She and I were close. Like sisters. Even though we both wanted Zep." She shot a hot glance at the man—and he didn't exactly look away.

And then Lokelani was back in the plumeria shade and Zep was hauling Delbert toward the water.

"What's this about?" Del asked Zep.

"She's wanted me for months," said Zep. "But I never made the move. Even when Lokelani would come down to Banyanland and party with Sable and me. The girls used to tease me about it. And now I feel horrible and guilty that something good is coming my way from Sable's death. But—" Zep made an all-is-one gesture with his hands. "Hey! Look down there, dude. The calves!"

It took Del a minute to even begin to comprehend what he was seeing. He halted in his footprints, took a step back. Normally the wide, shallow Stink Bay was slack—even when the Pipeline was booming offshore. Stink Bay was almost an estuary, and the water was always dotted with fishermen and Banyanlanders, immersed up to their waists, casting for colorful fish that Del associated with pet stores rather than fish markets. Only a few fishers were out there today, but they looked angry—even a little distraught. It was hard to blame them.

Stink Bay was teeming with small, erratic waves, three to five-footers. Del thought of the arena pool at Mar-Park in Surf City, where dolphins and orca whales did stunts for sardine handouts. Stink Bay was astir with frolicking shapes, powerful energetic forms that cut through the water like—well, like other water. Waves peaked from the flat surface, curled, and gathered a bit of foam at their crests while cupping blue-green darkness at their long tubular hearts. The waves traveled without breaking, moving straight toward the shore then peeling away at clever angles, gouging divots out of the mud and sand. Small forms glided alongside the larger ones, and the "calves" word clicked for Del. The little waves reminded him of whale calves at play near a mother whale. Another sight he knew only from Mar-Park.

"Is that—are they—alive?" he said.

"Exactly," said Zep. "Kinda spooky, huh? Their minds are made of vortex threads. Autonomous quantum aether hydrocomputation. See Bromelian over there? He's digging his calves."

A wiry little man in ragged shorts and a sunbleached T-shirt was standing near the water's edge, squinting at the sea. He was holding something that was a cross between a handheld blender and one of those water-and-glitter-filled wands that little girls play with. A transparent magic handle with a blender blade at the end. He'd stare into the handle for a while, then dip the blender into the water and laugh. The man's thin grey curls dangled out like springs from a shot clock, and he looked badly sunburned but oblivious to it. No sunglasses, no hat, and the marks of melanoma scars puckering his forehead—apparently there were lessons he could not be bothered to learn.

He noticed Zep and smiled, with none of his daughter's reserve. "*Kia ora*, Zep! I suss this is your matey Del?" Delbert put his hand out, but Bromelian didn't stop fiddling with his wand, didn't seem to notice Del's gesture. He was too busy talking. He had an annoying voice.

"I'll wager you blokes can improve my wave-calf stir," he was saying, in his penetrating tenor. "I'm making a hash of it today, and this quantum aether controller is a mare. Those two boards of yours—I gandered them. Sweet as. They'll be brilliant for chatting up our wavy bunyips."

"Uh, sure," said Del uncertainly. Although he'd seen Bromelian around the island, he'd never talked to him before. Zep hadn't warned him that the man would be more or less incomprehensible.

Del took a long look at the bay again, wishing that it didn't keep bringing back memories of Mar-Park. There had been a trainer death there, and protests against conditions under which the captive cetaceans were kept. There was something unnatural about Stink Bay and Waimea Bay being alive with sly, slinking movement that was completely unrelated to the wholesome, hearty waves of the Pipeline break, those monsters faintly visible as crenellations on the horizon.

"I'm gonna rap with Joe a little more," Zep told Del. "You fetch the boards, why don't you? I left them by the pool."

"Like I'm the sidekick?" said Del.

Zep just waved that off. He was leaning in close to Joe Bromelian, laying down a random line of bullshit. Whatever. Del made his way up toward the mansion's broad lanai, which surrounded the biggest, most irrelevant swimming pool he'd ever seen. No sign of their boards. And now Dick Chorkly and Lokelani appeared—Chorkly carrying a tank and an insecticide sprayer. Reeking of death.

"Sure must be nice, coming to Mr. Bromelian's estate to live rent-free," said Chorkly. "You and Zep conning that crazy old man. Parasites. Living off him and off the taxes that working folks pay to keep people like you in free handouts. You and your skanky freak boards."

"Each of us has our place in the grand scheme," said Del, his thinking informed by his contemplative life amid the jungles of the canyon. "Zep helps Bromelian with the tech and the public relations. I tame the new waves. You trim the palms and take care of pests."

"That I do," said Chorkly, squirting a thin mist of acrid poison.

"Go easy on that stuff," said Lokelani. "Del, your boards are at the cabana. We moved them over there. Don't forget it's almost time for Sable's paddle-out."

Del didn't feel like thinking about grungy, dead Sable. As he headed toward the cabana, he was instead wondering why he and Zep attracted enemies like Dick Chorkly wherever they went. It was like a universal constant. No matter how paradisiacal the setting, no matter how much they evolved and grew as people, there was always some barnacle like Chorkly in your path, eager to lacerate your great toe of wisdom.

The cabana was pleasingly large, a one-room guest cottage with two futon couches that could double as beds. Zep and Del's surfboards were resting on the couches like warriors' shields upon sarcophagi.

Zep's board Chaos Attractor was, as ever, a translucent colorless construct of nubly piezoplastic, a poised, flexing form with the outlines of something dark and skeletal at its cloudy core. Its circuitry was a multilevel kludge fabbed around a heavily obsolete CAM8 cellular automaton card, the more recent additions being, if you will, ironical hacker-type commentaries upon the original circuits, whose meta-semantic nonlinear feedback features remained nevertheless intact.

Delbert was proud to say that his board was more postmodern than Zep's vintage stick. Del had named his tool "Fubar." It was a biotech yellow—and in some sense a banana, or a pumpkin seed, or a sea slug, or all of the above. Like Chaos Attractor, Fubar had a rough hide, optimized for exchanging eddy-current info with the ever-evolving seas.

Del and Zep had upgraded Chaos Attractor and had bioengineered Fubar during one long, mad night before they'd left for Hawaii. A wild, stoned party at a Surf City start-up incubator complex—Zep had been there selling the youthful scientists some intelligence-enhancing slime mold.

Yes, when you came down to it, Zep and Del had already been where old Joe Bromelian was now, had been there for a long time. Although, admittedly, Zep and Del had never made any waves seem so convincingly alive. They knew how to talk to the surf, yeah, but maybe they hadn't been saying exactly the right things.

And they hadn't known about quantum aether. According to what Zep had said on the drive over, a fine overview of Bromelian's methods could be found in his paper, "The Quantum-Aethereal Animation of Physical Fluids." Del of course had no plan to read any kind of science paper, ever, but Zep claimed he'd already absorbed the broad outlines of Bromelian's seminal work.

"Quantum aether is . . . *nothing*," Zep explained. "In the deepest and purest sense of the word."

"What a scam."

"Listen to me, Delbert. Quantum aether is, like, the space between elementary particles. Completely clean and unencumbered, you wave, with no sleazy Higgs undercoatings, no gravitational dings, no jabbering pairs of virtual particles."

"Do I have quantum aether?"

"You're dripping with it, dude. Because you're conscious and alive. Quantum aether congeals around us like moths around lights. Add quantum aether to something ordinary—aaand the lights come on by themselves."

"Because you've added nothing?"

"Pharmaceutical-grade nothing," said Zep. "The teensiest touch of quantum aether—and even a *puddle* gets high."

Del laughed and shook his head. "Like old times. The wackest surfari ever."

Bearing their exquisite boards from the cabana down to the beach, Del felt himself heraldic and iconic. Maybe it was the quantum aether in the ocean spray. Joe Bromelian was stirring the sea with his blender wand, and his indie waves were growing. Seeing them, Del swelled with surf-lust. He'd carve the face of a towering monster. Show Lokelani where he was at.

"Let's hit it," Del called to Zep. "Point out a calf you like and we'll cut it away from the pack. Our boards can talk to it. We'll goad it up all gigantic and ride it to the Pipeline."

"And score yet another hackneyed, cartoon-like *big ride*?" said Zep, unexpectedly glum. "Been done, crude dude." Zep pointed down the coast toward something they couldn't see. "You keep forgetting the other thing. The crematorium. Sable's gone up in smoke. From *her* giant wave yesterday."

"Your mate's right wonky," Joe Bromelian said to Del. "A down dag. But good on ya, Del, for wanting to ride a wave-calf to the Pipeline. Put the kibosh on those rub-bishy jet skis, eh? I'm for making our Stink Bay into a fully organic surf resort. Lokelani Bay, I'll dub it. These waves of mine, they're going to dredge the bay out a bit, too."

Del gathered his courage. There was something he needed to say. "The word is you're an earth-raper, Mr. Bromelian." He gestured at the seven cloned mansions that lined this side of Stink Bay. "And Chorkly says you want to ruin that beautiful spot where they filmed *Green Planet of Death*. I've been living up there. A heavy natural vibe in that canyon. *Mana*. You shouldn't screw with it."

Zep was elbowing Del, but Bromelian's reaction was unexpectedly mild. Rather than challenging Del's charges, the old man nodded.

"I'm like Dante in hell, isn't it? Lost in a dark wood. Compounds or shacks? Glens or farms? The housecats against the kiwi birds, eh?" He gestured along the shore of

Stink Bay. "Truth told, I don't like these puffed-up houses. A sad blunder. They should come down."

"Dude," said Del, thrown off. "Trash seven mansions? You're over the falls."

"Funeral time," interrupted Lokelani, walking down to the beach, plumeria perfume wafting from the leis she carried in her arms.

"I'll take those," said Delbert, eager to bail from his odd conversation with Bromelian. He stepped close to Lokelani. His board Fubar wrapped tendrils around the load of leis. And Del laid the board on the water of the lapping sea's edge.

"One of my men brought the urn," put in Chorkly, suddenly on the scene as well. "I took care of the cremation. No need for an inquest."

Zep gave Chorkly a long, hard look, then laid himself down on his eerie Chaos Attractor. The funeral urn fit into a suddenly appearing pucker on the board's imipolex deck.

A little pair of waves took hold of Zep's and Del's boards and propelled them into Stink Bay, sliding them along like an airport's moving sidewalk.

"Can you frikkin' shut your crack with Bromelian?" hissed Zep. "Dude wants to give us a turkey dinner, and you're pissing on his leg."

"I worry about him ruining my scene," said Del. "That *Green Planet of Death* set. And I don't like that he's tight with that psycho Chorkly. Chorkly should be killed."

"It's going to happen," said Zep. He seemed serious.

And now, with a massed ululation, a horde of homeless surfers emerged from the tangled thickets of Banyanland, riding boards, or empty fuel drums, or wooden doors—all of them propelled into Stink Bay by the helpful calves.

In the bay's center, the mourners formed a great circle, sitting mostly upright on whatever debris they'd ridden. An undersea canyon snaked in here, giving the water some nice depth. Del settled himself over the deep blue center, planning to hand out the leis.

In a normal sea, there was an art to keeping your position in relation to other surfers. Constant little wiggles of feet and hands to counter the wind, the surface undulation, and the pull of the tides. With so many of the mourners riding weird unseaworthy vessels, Del would have expected to see a patchwork of frayed design. But he was able to perch there, handing out leis one by one as the water surged with a clockwise spin, turning the guests around in a perfect loop, with a constant precise spacing between them. The leis were lovely, fragrant, an objective correlative for their remembrance circle. Soon each of the mourners was wearing one. A baby calf wave had nudged Del into a slot with the others.

Seeking the source of the gyre, Del looked back at the beach. Joe Bromelian was standing on the sand, shading his eyes, hands empty of his magical waveblender. Was the intelligent water choreographing itself on its own? As Del turned to say something about this to Zep, Lokelani slid in between them on her hot pink board with its wiggly blue pinstripes. She was holding Bromelian's blender-wand. Its transparent handle held jiggly globs and minute gems.

"He was only able to make one of these, but we take turns with it," she told Zep. "There's a fluid computation in the handle that emulates the surrounding sea. And the blender does a chaotic-butterfly wingbeat thing to the water, which is energized by the quantum aether. At least that's what supposed to happen. But the wand is kind of Mickey Mouse. Not all that reliable."

"Zep and I know all about chaotic waves," said Del, wanting to build himself up. "We have these special boards. Mine's especially rad."

For a moment, Lokelani studied him in silence. "You, Delbert? I don't think so." Her mask-like beauty was such that Del couldn't tell if she meant her dig as a joke.

He should have bounced back with something snappy—like, assume she's flirting, and start a peppy ping-pong of insults that segues into shared laughter and a torrid

boning session. Instead he clamped his jaws shut, sullen and morose. The water continued circling them round and round, with the surfers spaced as evenly as the tick-marks on a clock dial, Del brooding that he was a loser. This day was turning into a bummer. Probably Lokelani didn't like the look of him, after all the rough living he'd been doing, up in the canyon. He wished he was back there now, safe in his spaceship, imagining himself the rising star of a newly reshot *Green Planet of Death*.

The crowd was making Del uncomfortable too. Mostly strangers. A skeevey element was filtering into Banyanland these days, not surfers at all. Del had hardly known Sable and, frankly, he didn't give a damn that she was dead. Zep hadn't really known her that well either, even if they had shackled up—to the extent that that was possible, Banyanland lacking any sort of shack. And yet here was Zep, launching into a lame, slush-brained eulogy.

"Sable, as all who were lessened to know her knew, was a watergirl. And so we return her to the sea. In the brief time she shared our fallen paradise, Sable threw herself into what matters. Surfing . . . love . . ."

"Hard drugs," someone muttered, and Lokelani cracked a little smile. Delbert couldn't stop staring at the little blender-wand in her graceful hands. Her queenly scepter. She kept buzzing it and dipping it into the water, sending ripples out from her board. Weird, irregular shivers with pitted surfaces. Well, hell, Del and Zep could do funky moves like that. Lokelani wasn't so special. Del synched his mind-vibe in with his board Fubar and set it to shuddering out some nonlinear ripples of its own.

The wave calves, otherwise circling placidly around them—even with a note of solemnity and respect—were avoiding Lokelani's ripples, but they didn't mind Del's. Score one for the home team. Maybe later he could get to talking to Lokelani again and drum into her the fact that his and Zep's boards were far better equipped to be wave controllers than some dipshit My-Little-Pony-type blender wand.

Not that Del ever getting down with Lokelani seemed at all likely. Her gaze kept returning to Zep. In quiet defeat, Delbert accepted that she was truly into his cracked, skinny friend. As far as grooming went, Zep looked even ranker than Del—the dude had sticky shreds of vine in his matted hair from sleeping on the ground in Banyanland. Dreadlocks were in the offing. Zep's bullshit funeral oration raged toward its climax.

"And now! As ye vibe with the waves, and as ye delve into the mind-flashes and other psychic debris of Sable's passing through our vale of careers . . . isn't it? We command her to the sea. Born of womb's water, dead in water tomb. May she cavort with the infinite zap and greet the clear blue light with zag. As that greatest of all philosophers Ellen Yottawatts hath said: As the ocean *waves*, so doth the universe *people*. Fair Sable . . . watergirl . . . slosh into us as we daily pray. Amen."

With that, Zep unscrewed the lid of the urn and dumped the chunky grit of Sable's remains into Stink Bay. He was openly weeping.

It was a powerful moment, Del thought, proud of his friend—but the water's behavior disrupted it. As the ashes sifted into the sea, it began to gurgle and churn like a garbage disposal choking on a cherry bomb. The surface bulged up, twisting like a dirty blue rag—as if water could wring itself out.

Lokelani was muttering to herself, perhaps hoping to send a chill-out message to the waves. Or maybe she was the one who'd stirred things up—like in a fit of jealousy over Zep's manly grief? The harmonious symmetry of the gathering began to disintegrate. People were bumping into each other. The wave calves were no longer an orderly school of silent swimmers, they were more like playful ill-tempered kids, picking up toys and banging them together. Their smooth pompadour crests had turned punk-ragged. The mourners with good boards began paddling to safety. And the less well-equipped Banyanlanders abandoned their raggedy-ass buoys and stroked for shore on their own. A minute later, only Zep, Del, and Lokelani remained.

Del lay quietly on Fubar, watching the fountain-like burbling at the center of the abandoned remembrance circle, waiting to see what Zep and Lokelani would do. He trusted his board to take care of him. Zep was quiet, too, sitting astride Chaos Attractor as if lost in contemplation. The powerful computations in the body of Zep's board seemed to be neutralizing the humps and dips of water coming at him. He sat in a personal pocket of calm.

Lokelani was flailing at the ocean with the beater wand, but to no good effect. The water around her was pocked with holes, as if invisible rocks were hailing down. Lokelani would have liked to backpaddle away from the formless form at the center of the dissolved circle, but she kept failing to gain purchase. Hollow vacuoles seemed to be forming in the water around her hands, leaving her clawing at foam.

The anomalous hump in the water began gliding toward the Pipeline, a shape like you'd see if something were swimming below the surface. The calf waves were herding Lokelani, Zep, and Del in the thing's wake, pushing them out toward the unquiet open sea.

"Stop!" cried Zep. He rose to his feet, balancing on his slowly moving board, and he dug it in hard against the calf waves. Zeppish vibrations arced out from his shuddery board. And now the ocean around the three of them grew flat and calm. The moving lump from the funeral spewed out a puff of mist, like the steam from a whale's blowhole. The swirl of mist drifted off, and the anomaly was gone.

"It was a whale!" said Delbert, wanting a comfortable explanation. "A whale rose up under our circle. That's all that happened. Not every single wave has to be quantum aether."

"You're a wizard," Lokelani was saying to Zep, warmly smiling at him, and not even hearing Del.

Perhaps some of Del's sour envy filtered out through his board and into the water, sparking a fresh wave. Or perhaps the wave was seeded by that odd water spout. Or by Zep's board. Or—who knew?—by the evil vibes of Chorkly, who was paddling toward shore, but not without casting the ol' stink eye back over his shoulder at them.

Or maybe it was just a goddamn wave, a tasty one, quite rideable, not a tsunami, but larger than anything normally seen in Stink Bay. Del's spirits rose. This fine ride would be a sweet escape from the day's bum and bewildering ceremony. Both he and Zep were in good position to catch the fluke of water. But Lokelani was awry. She got lofted high onto the tip of the massive wave, totally out of synch and needing to drop her wand and abandon her pinstriped pink board, diving backward into the foamy crest, floundering through the curl and emerging from the glassy backslope.

The scattered mourners closer to shore had little time to prepare for the close-out wave, although they did have a bit of warning from Zep and Del's whoops, the two brahs riding the muscular water ridge toward the Banyanland shore. Still wanting to score some points with Lokelani, Del snapped back through the breaker when it started bottoming out, then circled back toward the wahine. Zep stayed on the wave, even after the inevitable beach-break, riding the foam up beyond the normal high water line, executing a final hincty hop that sent him gliding across the muddy ground like a skim boarder, penetrating all the way to the very banyan tree where he and Sable had made their short-lived and now-pathetic home.

Meanwhile Del had picked up Lokelani. To his immense pleasure she was lying on top of his back with him lying on his stomach on Fubar, his banana-slug board. Almost too good to be true. The board was languidly humping, by way of ironic or hopeful comment. Onshore, the Banyanlanders were gesticulating like excited ants, some of them laughing, others clambering onto giant vine-twined roots, and Zep in the thick of the crowd, bragging about his big ride.

The shallow muddy bottom had been stirred up by all these weird waves carving at the shore. Del paddled in through churned brown foam, passing dazed stoner surfers just now surfacing to see if it was safe to wade out through the shallows, staring warily at Stink Bay, paranoid that an even larger wave might be in the offing. But for now the show was over, with no evidence of any wave action at all—certainly not of the Bromelian variety. Slack slosh plopped at Del and Lokelani's ankles as they waded onto the beach, littered with the crazy collection of floatation devices that had borne the Banyanlanders to the paddle-out.

Lokelani let out a cry when she spotted her pink surfboard being carried off by two Banyanland kids. Zep retrieved it for her.

"Should have used the leash, Lokelani! But, hey, calm down. Just a board. Del and I can make you a better one any time you want."

"And I found the wand," called Dick Chorkly, who'd already tucked it into the waistband of his board shorts. The sudden wave had favored the man with a twisted ankle and a crash-rash. The left side of his face and much of his chest were oozing pinkly, as if he'd been rubbed with sandpaper.

Embarrassed and miffed, Lokelani put her nose in the air, tucked her board under her arm, and stalked off toward the Bromelian estate.

All along the beach lay the sprawling, piss-smelling Banyanland encampment and its fabulously intricate trees. A virtual mansion. Some little cook-fires burning under there, men and women grilling fish, chatting and laughing, kids climbing in the branches and playing tag. And, yes, some of the Banyanlanders were smoking dope, slurping wine, sniffing dust. And some lay passed out on the ground like sodden mounds of clothes. Happy hour all the time.

Chorkly limped over to yell at Zep. "I got hit by a door! It was in the water thanks to your skeezy pals!"

"Think of it as a door to a new friendship," said Zep, flashing a toothy, fake grin. "Del and I are on Team Bromelian with *you*! Did you make up our beds? Fill our fruit bowl? Fresh vase of flowers? Chill our brews?"

"I'd like to know if Lokelani crafted that last wave," muttered Chorkly.

"Waves can be weapons, huh?" said Zep, for some reason looking ready to punch Chorkly in the face.

"Maybe we're getting a little superstitious about all this," said Del. "Overheated. I'd call that last wave a standard rogue. Not so unusual. I'm thinking old Joe's quantum aether jag might be—a pile of crap?"

As if to gainsay Del, one of the pup-tent-shaped little wave calves was perched sideways in the water, right at the shore, evidently listening to their conversation.

"Okay," Del amended. "We do have some odd water-bumps here. But at some point it shades into paranoia and you imagine everything's fitting into a pattern. Bromelian is overselling his routine. He wants to dazzle us so we lay down quiet for his giant Stink Bay resort—and then he'll put a row of billionaire houses at the top of my canyon."

"Del the holy hermit," said Zep, his mood increasingly foul. "Saint Bringdown comes to town."

"Put in a high-end resort, why not?" said Chorkly. "Those dumb-ass banyans aren't native plants anyhow. I'd love to saw them down. Or dynamite 'em. That'd be a happy day. All Stink Bay needs is a little demolition and a namechange, and it could be a paradise. With Mr. Bromelian's quantum aether waves—"

"I call bullshit on those waves," snapped Del.

"I say watch your ass in the lineup," said Chorkly, hard and cold. "Little Sable—she had a big mouth, know what I mean? Funny kind of wave she was on yesterday. No bullshit about *that* wave."

"And you know all about it?" said Zep, his voice dangerously calm. "I saw you there."

"So I was watching," said Chorkly. "I was the one who gave Lokelani a ride over there." And with that, he turned and walked back toward the Bromelian estate.

Del felt chilled. He was wet, the breeze was sharp, a cloud was over the sun, and this funhouse was realer than he wanted it to be. "The wave that took Sable," he es-sayed. "You said it was weird, Zep. And Lokelani was there? And she wanted to get you away from Sable. So . . . I mean, you'd have to wonder if Lokelani . . ."

Zep stared at Del, and for a minute Del expected acknowledgment and comprehension. Instead, Zep's face turned nasty. He shoved Del full in the chest, open palmed but hard enough to send him stumbling backward.

"Zep—"

"I'm not talking to you, man. You're so totally out of the loop."

Zep stormed up the beach after Lokelani, elbowing Chorkly in the back of his head as he overtook him, leaving the man crumpled on his side, cursing, another piece of beach detritus.

Del sat in the shade of the banyans for a while, not sure he was up for staying at the Bromelian cabana with Zep. The banyan grove was like a cathedral, but better than that—it was fully alive, its columns and arches arranged with nature's spot-on abandon, nothing out of place, nothing *in* place, everything perfect as it was, but fully changeable, the tree's great distributed mind present in every trunk and tendril, always knowing what to do.

A pair of little kids showed Del a game that involved moving pebbles up and down a row of squares. Their mother gave him a bong hit. The oddball waves continued chewing away at the muddy sand. It was relaxing to watch them do their thing.

Life at the edges wasn't so bad. The old spaceship in particular, that had been nice. No fights. There were avocados and mangos in the canyon, papayas and breadfruit to eat when he got hungry. At the same time, the lack of a quality outhouse had gotten nasty. Even the Garden of Eden must've had a shit pit tucked away in it that nobody talked about. The alternative was pretty unglamorous . . . sort of like Banyanland, in truth. Something to be said for modern conveniences.

So Del headed up the hill to the Bromelian estate, just to give the cabana a try. It was pleasantly empty. A good place to spend the rest of the afternoon, and let the worries ride. The cabana's fridge had some nice baked mahi, octopus poke, roast yams, and a good stash of Longboard beer. He ate, drank off a bottle, took a cool shower, then threw himself on a couch to sleep off the beer-blur and recuperate from the day's high demands. It had been a long time since he'd slept without worrying about bugs and rodents, and he must have needed it far more than he realized. When a sound of giggling woke him, it was night. Light flooded the room as Zep stumbled in with his arm around Lokelani.

"Ew!" quoth she, spotting Del. "He's here. Well, we've had our session, Zep. I'll kiss you goodnight and jam back to my room."

"I should have stayed up there with you," said Zep. "I liked it."

"We'll hook up again," Lokelani said. Long liplock with Zep, tongues, pelvic undulations. Del closed his eyes and waited. Finally it was over. Lokelani even gave Del a pat on his head as she left the room. Kid-brother-figure that he was.

"You closed the deal?" Del asked Zep.

"Skin to skin," said Zep, already peering into the fridge. "This is a hella sweet set-up, huh? I'm sorry I shoved you."

"Maybe you were right," said Del. "I mean, Chorkly was at Waiamea beach too, and he carries around that wand sometimes, so it could have been—"

"Knew that all along, dude," said Zep. "Way ahead of you. Chorkly murdered Sable with that wand, sure as if he used a gun. I already took action."

"You—you did something to Chorkly?"

Zep looked sly. "I put in a word. To Sable's wave. When the ashes hit the water. That weren't no whale we saw, no whale at all, my lad. But that's enough sinister machinations for one day."

Del sat up with Zep on the cabana's patio for a while, eating some more, drinking another beer, watching Zep burn a jay, down a bottle of tequila, and snort up some dust. A crescent moon was sinking in the west, silvering Stink Bay with her light. The surface was cratered and pockmarked, like a porridge coming to a boil. The calf waves were still out there, pinballing back and forth, tireless, purposeful. Now and then a few would merge together and you'd see an acne-pitted comber running along, the bigger wave adapting its path to swallow up as many of the littler ones as it could, then hitting the shore in a thumping beach break.

"Eating the sand and dirt away," said Del.

"Especially on this side," slurred Zep, giving Del a heavy, signifying-type look.

"Do you know more than you've said?" asked Del.

"I know quantum nothingness," said Zep. "Do a night-ride?"

"Mañana," said Del.

"Thass cool too," said Zep. "Dawn patrol. We'll be up early." *Rrrright*. He stumbled to his couch and passed out.

Delbert nestled down on his own bed across the room. Images surged through his mind. It was like when he'd stick his head into that waterfall way up canyon, with the living stream drumming on the shell of his skull, filling his mind with scraps of past and future dreams. He drifted into a trance, riding his mental rapids.

At some point a splashing sound disturbed him, a gurgle from right across the room. Plus soft groans. Del slitted his eyes, half-awake. The only light was the twinkling of the stars through the uncurtained windows. It took a minute to make out what was going on. A woman was straddling Zep, grinding on him, a shiny, undulating woman, besprent with starry points of light, aglint with inner phosphorescence, a wave woman, a watergirl—

"Sable," mumbled Zep, too zonked to wake up. "You're wet. It's good. But cold, so cold. Can't get stiff. Sorry, babe—"

The wave woman answered with a liquid pop. Just then, the room lurched, as if in—an earthquake? A landslide? Del came fully awake, in a panic, jumping off the futon and snapping on the lamp.

Opposite him stood watergirl Sable. Zep was fully inside her—not inside like having sex, but inside like being her skeleton. He was still out cold, with eyes closed, his wavery features all warped within the glimmering silver woman. A distorted, water-wrapped Zep with big breasts and mermaid hips, bits of kelp and even a stray starfish dribbling onto the floor. Yes, the swaying Sable was holding Zep safe asleep inside her, with two little vortices feeding air into his nostrils like a sparkling mustache.

"What the hell?" said Delbert. He grabbed at Sable, trying to get a purchase on Zep's arm, wanting to pull him clear. But the watery substance of Sable's wave-body was subtle and strong. It vibrated in a chaotic buzz that foiled any effort to get a firm hold.

On the contrary, it was Sable who took hold of Del. The watergirl maneuvered Zep's fingers around Del's wrist, triggering a grab reflex in Zep's hand, and now Del was being tugged across the floor tiles made wet by Sable's crossing. They went out the open door and into the night. A gnawing sound rose from the sea, a relentless scrape.

Del could hear voices over toward Banyanland. Chorkly there on the beach with his truck, and old Joe Bromelian capering in the headlights. Gesturing with his feeble wand, as if he might possibly calm the furious waves, or maybe urge them on. Hadn't he said something about wanting the mansions gone?

Be that as it may, the watergirl was leading Delbert in the opposite direction, out from under the palms and across the lawn toward the big house. She moved

awkwardly, tottering along, with Zep's slumbering carcass within her sloshing bod. Although she'd released Del's wrist by now, he followed her, wanting to understand what he saw.

The Moon was down, with the Milky Way a ragged banner bright across the sky, and the starlight shimmering on the overblown house, grown weirdly fluid in its look. Its edges and angles were softened, as if encased in liquid darkness. And now the image came into focus. The ocean was invading the house, both filling it and coating it on the outside. A steady column of wavelets was wriggling up across the grass from the shore, an army on the march. The tide was coming in for sure—straight into the house, on little wave feet. Some waves went in through the cracks beneath the doors, others swarmed sluglike up the outer walls, burbling softly, filtering in through the banks of louver windows.

The waves were demolishing the mansion. Filling it with, like, a megaton of water. Some waterproof emergency lights within the house had triggered on, and the windows gleamed dimly green. A phantasmagoric scene. Left on his own, Del might simply have marveled at it, watching slack-jawed, waiting to see what would come next—but Sable had a mission.

The silvery watergirl was pointing at a window upstairs, and she mouthed a word that came out like a gurgle from a water bottle. Del could hear some of Zep's voice in it, borrowed for the purpose: "*Glugelani . . .*"

Lokelani. Of course. She'd be alone in her bedroom, alone in the mansion, trapped by the rising flood. And Sable wanted to save her. Despite their different backgrounds and despite their rivalry over Zep—Sable and Lokelani had been friends.

Apparently the watergirl feared she couldn't accomplish the rescue alone, and her plan had been to involve Zep. Del's guess was that she wouldn't be getting much help from the dude. Zep was about as out of it as even Zep had ever been before.

Gamely Sable continued shambling toward the mansion's entrance. Del stayed with her, fascinated by the apparition of Zep suspended within the watergirl like a fetus in a freakshow tank. Sable and Del made their way through a swarm of puppet-shaped waves. The waves were like migrating newts—a horde of wet, low-level critters bent on the same goal. Certainly the watergirl was smarter than them. But maybe not smart enough to understand about Zep?

Reaching the mansion's front door, Sable tried to tug on it, but her water-hand wasn't strong enough, and her Zep-hand was too drunk. Gentleman that he was, Del stepped forward to do the job. He yanked the door open and sprang to one side—expecting a torrential cascade. But, lo, the door opened to reveal a perfectly flat and seamless surface, a trembling wall of water.

Gingerly Del prodded it, then peered inside. It was like staring into a monster aquarium, a tank for whales, weirdly lit by two or three of the rather dim emergency lights. You could see all kinds of crap drifting around in there—chairs, orchids, cushions, pineapples, swim-fins, towels, Maori carvings from New Zealand. Things would disappear into bands of shadow, then sashay back into the yellow shafts of light. The rugs had come loose from the floors, and they wavered in the gloom like shapeless manta rays. Surreal and creepy.

"Am—am I supposed to swim upstairs alone?" Delbert asked Sable, his voice crackling. "I mean, all that water is alive, right? I think—I think you better come with me."

He couldn't tell if the undulating watergirl was understanding him, so he switched to mime. He pointed at Sable with one hand, pointed at himself with the other hand, placed his hands together, and darted them toward the door's taut water membrane. "Swim together," he said again, raising his voice above the raging of the sea.

Quivering ripples passed across the watergirl's womanly surfaces as she pondered her response. Reaching a decision, she let Zep go. The feckless stoner slumped out of

her body onto the wet grass, utterly obliv, flat on his back, mouth open to the sky, gently snoring, at peace.

Sable formed herself into a spiraling column of water, and made a beckoning wiggle. Del ducked into her as if climbing inside that waterfall near the summit that he loved. Sable's salty coherence warped around him, enclosing him completely, tight as a wetsuit. The sounds around him went thick and slow, his vision blurred, he felt a moment's fear of suffocation.

But now, *bloomp bloom blup*, the watergirl had bulged an air-filled bubble around Del's head. Like an astronaut's space helmet. Yeah, baby. He was fully rigged for diving the depths of Bromelian's cavernous home. Moving as one, Del and the watergirl backed off from the house, took a running start, and dove in through the surface-tension membrane across the front door.

Immediately Del found himself tumbling ass over teakettle, as if in a Pipeline wipeout. He banged his elbow against a drifting cricket bat, bumped his chin with his own knee. Odd and treacherous currents inhabited these living waters. At least Sable's body was retaining its integrity. And Del's airy bubble-helmet was still in place. Where the hell were the stairs?

Floundering, dog-paddling, panting, and veering off at false angles with spasmodic frog-kicks, Del eventually made it to the far end of the hall and stove one of his fingers against the banister of the huge spiral staircase. None of the emergency lights were illuminating this particular spot. Staring up the core of the inky stairwell, Del felt an atavistic fear.

Certainly he'd dived before, but he'd never liked the idea of wreck diving nor of cave diving. He'd certainly never thought to take up house diving. He very much wanted to turn back. But Sable forced his hand. Somehow drawing air from the surrounding waters, she expanded her gently flowing body into a full bubble around Del's body. They shot up through darkness to the second floor. It was like riding inside a lava-lamp blob.

The ocean had very nearly reached the top floor's ceiling. Almost immediately, Delbert crowned his head on a giant wooden fan, setting the blades stirring like oars. And now, creeping like an amoeba, the Sable air bubble crawled along the dark ceiling of the hall, carrying them to a closed door with light around its edges. Lokelani's room. Sable bubbled away some of her air, and Del sank to the hallway floor.

He fumbled at the crystal knob and pushed his weight against the sodden door. It didn't want to budge. The door was warped, and the water-filled room beyond was resisting its motion. This would be easier if there were air on the other side. As soon as Del had clearly formed that thought, Sable picked up on it.

His protective envelope of air squeezed itself flat and slimed off like a sea slug, creeping beneath the door—leaving Del abandoned and alone, in a fine position to drown. Impish vagrant currents plucked at his face, seeking for a path into his lungs. Dark vortices sucked at his legs, keeping him away from the air on the ceiling. Don't panic, carver. He'd been underwater longer and deeper than this. And he could trust the watergirl, no? Think positive, dude. Block those harsh raps you ran on Sable while she lived her ratty life. Beneath it all, she was a good person, no?

Fighting off despair and the sinister currents, Del braced himself into the door-frame and turned the knob once again. And, yes—thank you, Sable—the door had air behind it now. It exploded inward. The flowing rush carried Del into Princess Lokelani's redoubt. And there she was, straight in front of him, treading water before the starry square of the balcony door, holding her face against the ceiling, drawing life from the knife-thin stratum of air. She waved a thankful greeting with her shapely foot.

The room was lit by an emergency lamp near the door. Lokelani's surfboard was in here, floating pink against the ceiling. Del caught hold of the board's dangling leash, just in case, and began making his way toward the window, with the living currents fighting him. His pulse pounded in his ears. His air-starved chest was protesting. His fingers were numb with cold. Everything was happening in torpid slow motion. Lokelani positioned herself on her board, with her back against the ceiling. Mentally readying himself to mount the board as well, Del wrenched on the latch of the balcony door.

Oh, wait, the door was already open—naturally Lokelani had thought of that. But another of those frikkin' surface-tension membranes was stretched across the frame. A gleaming barrier with a mind of its own. Where was Sable?

Still hopeful, Lokelani nudged her board's nose forward. Del clambered up behind her, sinking the board enough so that its tip was bulging against the stubborn membrane. By now the air on the ceiling was gone. And Del was seeing spots.

"Sable!" he hollered, peering down into the room, his voice but a liquid pulsation.

The watergirl was visible as a glint in the water, like a glass statuette—her face and form as subtle ripples. She flashed a seawater smile, rose up beneath the board, and powered them through the membrane. The spell was broken. Del wolfed down a hungry breath.

Rivers of seawater gushed from the house's openings. Del rose to his feet upon Lokelani's hot pink board, with Lokelani standing in front of him. Crisis or not, the two surfers were bent on savoring this mad and epic ride.

Bromelian's house was coming apart at its seams, its shoddy gypsum walls dissolving away, the roof tiles showering on every side, the jerry-rigged framework splintering amid the rushing flood—furniture, fittings, and shrubbery swept along.

Sable stayed with Lokelani's board, under it, in front of it, behind. She overrode the surfers' zigzag wave-carving and angled them toward the flabbergasted Zep, who was standing on the lawn with the torrent rising around him. A million gallons of water had been enough to wake the man up.

Oh, he was more than awake, our Zep, he was fully back in the game. Letting out one of his trademark whoops, he clamped his hands onto the tail of the pink board as it sailed past. They coasted to a stop near the cabana, two hundred feet across the lawn—flanked by a sodden sofa, a roast ham, and a Maori shield. The sky was just growing light. Del could see that the six other Stink Bay mansions were rubble as well.

Sable was still with them. She looked like a watery mermaid again, with the lower part of her body in the knee-high surge. A little fish flipped from the watergirl's shoulder, landed on Zep, slid down his chest. She stretched up and kissed him, or rather, splashed him—and then sloped across the lawn, slid off the edge of the nearby cliff, and dropped into the sea. The waves were calling. Massive action out there in Stink Bay.

"Wait—there's a cliff now?" said Zep. "In the lawn?"

Yes, the beach was gone, also the slope to it, also most of the lawn, leaving a twenty-foot cliff that was steadily advancing toward the shattered remains of the Stink Bay mansions, the cliff edge continually crumbling, with fresh bits falling into the hungrily undermining sea. Zep and Del's cabana had but three feet of tile left on its lanai, which ended at that same twenty-foot cliff dropping down to the agitated waves.

"Nonlinear," said Zep, staring out at the dawn-silvered sea. "Cubic wave equations. Leprous vortices. High Reynolds numbers. The hyperturbulent regime."

Del felt annoyed. "How about some praise for me saving Lokelani?"

"Sorry I missed out on that," said Zep.

"You were too zonked," Lokelani told Zep. "Some hero."

This was the part where the beautiful girl was supposed to wrap her arms around the regular-guy hero and say, *You're the one for me!* But that wasn't happening. Instead Lokelani was laughing and tousling Zep's hair.

Right about then, the front wall of their cabana sloughed off and fell into the sea.

"Get our boards from our room so we can bail," Zep told Delbert. "I'll start my truck." He looked around, as if keenly orienting himself within a steadily altering alien landscape—but really just coming down from his binge. "Where, uh, where is the truck?"

"Uphill from my totally destroyed house," Lokelani told him, leaning against his side. "I never liked that place anyway. And Dad was ready for a change, too. Not sure where he is. He and Chorkly went out somewhere before all this started."

"I saw them down there," said Del, pointing toward the Banyanland beach, dim in the morning fog. But Lokelani and Zep weren't listening.

"What if we go spend some time in Honolulu?" Lokelani was saying to Zep.

"And then Easter Island," said Zep, taking her hand. "*Rapa Nui*. Delbert can come too."

"Ew."

The two of them went ambling up the slope.

The eastern edge of the sky was rimmed with pink and gold. As Del found his way to the cabana, skirting around the migrating wave pups, the fog lifted and he again caught sight of Joe Bromelian. The old man was still on the edge of the Banyanland beach, not all that far off. He wasn't yelling at the ocean or waving his wand, no, he was grinning, in a state of exaltation, as if overjoyed to have his Stink Bay mansions destroyed. Del thought of a Pacific Northwest Kwakwaka'wakw chief, celebrating a potlatch by throwing his possessions into the sea. Old Bromelian had made his way out of his dark wood of confusion. The Banyanlanders were milling around the man, slapping him on his back, and he was hugging them back. A new day.

Meanwhile, on that same beach, Chorkly was tilted back in the seat of his pickup, sleeping, with the rear of the truck crammed as always with mowers and gear. Delbert studied the hateful profile from afar. Surely Zep was right. Chorkly had murdered Sable, by screwing up her wave. Seemed like he ought to pay for that. Zep had said Sable might be able to do something about it. Sable and the rest of the waves. Maybe this game wasn't over.

It took Del a little while to get in and out of the cabana without falling off the cliff. He had to use a window in back, shoving the boards out through it. As he finally stepped free, he heard a rattle, squeak, and rumble. Oh shit. Chorkly's truck was speeding toward him. Evidently the man had circled around from Banyanland beach, asshole that he was, wanting to harass Delbert, or maybe even here to kill him. The truck was traveling fast with its headlights dark and with—the motor shut off?

Whoah. The truck didn't need a motor. Little waves were carrying it, energetic pups tufted up like foamy white steeds bearing Neptune's chariot. But this wasn't any kind of divine or joyful chariot ride. It was an execution tumbrel.

Chorkly was awake, wrestling with the steering wheel, his eyes bulging, his cheeks full of air, bubbles blowing from his nose. He had all the windows down, but the cab was full of pent-up water, holding him in. That same surface-tension routine.

One of Chorkly's arms managed to push itself out through the window frame—he was frantically waving Bromelian's wave-beater. A slender hand of water extruded itself from the window, plucked the beater from Chorkly's fingers, and cast it to one side, letting it land at Delbert's feet. And now, without slowing down, the truck skirted around the cabana and plunged off the crumbling cliff.

Running to peer off the edge, Delbert saw Sable the watergirl one last time—her lovely luminous figure, avenged and cheerful, waving goodbye from the truck as it sank beneath the eternal sea. ○

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NINETY-FIVE PERCENT SAFE

Caroline M. Yoachim

Nicole went to visit her best friend, Grant, the day before his family left for Opilio. She was jealous that he'd be part of the second wave—the first wave had already done the hardest work of establishing the colonies, but the floating cities would be nearly empty, an abundance of unclaimed living space. She'd heard rumors that families had so much space that each person had their very own room—a place that was theirs even if they went out.

"I got you something," Nicole said. She held out a small cube with a mini mint plant inside. The four-inch cube provided everything the tiny mint plant needed to survive a trip through space. Considering how small it was, the plant had been astonishingly expensive. Nicole had traded all her recreation credits for the last three months to get Livvy to give it to her.

He shook his head. "You keep it."

Nicole frowned. "You don't like it?"

"It's amazing, but I don't have anything for you. Keep it, and bring it to me someday in Opilio."

Grant had it in his head that this was a temporary goodbye, but there was no way Nicole's mom would ever let her ride the worm—5 percent of the pods that went into the wormhole never came back out. No one knew why. "We aren't coming to Opilio, Grant. Take the plant?"

"The colony is a better place, a better life. Think about it—floating cities in an orange sky. Jellyfish the size of a space station. Here, I'll pass you the commercial." Grant put his hand over hers, and when she authorized the transmission he copied the data to her storage implant. "You'll be sixteen in a couple of years, but if you get tired of waiting, you can go as a default."

"And then what, I can come live with you?" Nicole tried to think of something else to say, but thinking about Grant leaving made her want to cry, and talking about Earth stuff seemed pointless now. She hated goodbyes. She shouldn't even have come over today.

"Let's get this over with. Bye, Grant. Don't be wormfood." She tried to make her voice sound light and completely failed. She hugged him and then bolted out of his family's homespace before she burst into tears, barely hearing him call out goodbye

behind her. She felt like hurling the mint plant at the wall, but she knew she'd regret it later, so she tucked it into her purse.

The walk home took her past the base of the default elevator, a thin column of metal stretching up to the cavernous ceiling of the city. Baine was gray on gray on gray, an underground city of steel towers where the tallest buildings doubled as supports to keep the roof from falling in. Above the roof was the topside station, constantly bombarded by the raging snowstorms of nuclear winter.

Even the clothes the city provided were gray, although these could at least be programmed to look more colorful if you had the credits to buy overlays. Nicole's jumpsuit was crimson with a scatter of black flowers to accent her waistline. It was prettier than the navy blue student uniform, but Grant hadn't said a thing about the outfit. She wondered if he'd noticed, then reminded herself that he was leaving.

"You lost, sweetheart?"

Nicole flinched away from the voice, a man dressed in a default gray jumpsuit. She shook her head and kept walking. Mom had warned her a bunch of times to keep clear of the default elevator, but it was the fastest route to Grant's building. The area was always crowded. Hundreds of people in default gray lined up each morning to ride the pods to the surface and then onward to the colonies.

A few miles away there was an elevator for people who could afford to pay. That was where Grant's family would go. That elevator had scheduled departures and nicer pods, but the wormhole ate everyone indiscriminately, so his odds of getting to Opilio were the same as the defaults waiting here.

Nicole paused at the entry to her building to reprogram her clothes to basic navy before going in, but before she could manage the change Mom came up behind her.

"Nicole Morgana Blackensmith, please tell me you did *not* go walking around in that outfit."

When they got inside, Mom programmed their homespace into a single room with an old-style wood table in the center. Nicole suspected that Mom called this particular configuration "family meeting," but Nicole called it "Mom is cranky."

Mom sat across from Nicole. Dad sat at the far end of the table with three-year-old Tommy on his lap. Tommy was fiddling around with a game cube that was programmed way too advanced for him, a racing game with colorful cars on curvy looping tracks. He twisted the cube around, then shook it. When the cars skidded off the tracks and crashed, he laughed.

"Your father and I want to talk to you about . . . well, about a lot of things. The clothes that you downloaded, and that commercial that Grant gave you—"

"Hey," Nicole protested, "I put that on my private storage drive!"

"We can monitor everything you download until you turn sixteen, young lady, and I'm concerned about this ad. It makes the colonies look like some glorious vacation destination," Mom said, "and I don't want you to have such an unrealistic idea of what things are like out there."

Nicole projected the ad into the empty air above the table. If Mom was going to get into her private storage, what was the point of keeping it private? The commercial started with a hazy orange cloud, and then a pair of translucent jellyfish-creatures drifted across the sky. Aureliads. Tommy poked his hand into the projection, trying to touch a low-dangling tentacle.

The image shifted to show an aureliad next to one of Opilio's floating colonies, domed cities the same size as the massive jellyfish that shared the sky. "Come celebrate the wonders of a better life on Opilio," the recorded voice on the commercial said, "see the aureliads—"

Mom shut down the projection.

"Aureliad!" Tommy yelled, pointing at the spot where the projection had been. "Aureeeeliad!"

"No tantrums, please," Mom said calmly. "You and Nicole go play."

The calm quiet voice meant Mom was furious. Nicole took Tommy to the other end of the room. Mom pulled up a sound barrier, but if Nicole didn't get any privacy she didn't see why Mom and Dad should either. It only took her a couple of minutes to hack through.

"Rozzy, don't do this," Dad said. "She's upset that her friend is leaving, and if you go down hard about the ad she downloaded it's only going to make the colonies look that much more appealing. She'll go for sure the minute she turns sixteen."

"Don't you Rozzy me. You think I'm being unreasonable because I don't want her facing a 5 percent chance of turning into wormfood?"

Tommy pulled on Nicole's arm. "Aureliads?"

"Is it really such a terrible idea?" Dad asked. "We could all go, leave this overpopulated cave behind and live in the clouds. You're only looking at the cost, but what about the reward? There's more space on Opilio. You could have that garden you've always wanted."

"A garden?" Mom asked. "I can't believe you're falling for all this propaganda, too. They send criminals and defaults through that wormhole, and do you know why? Because either they end up on the colonies or they disappear into a collapsed worm. No more problem. And you want that for our family?"

Nicole was surprised at the turn the argument was taking. Her parents were big on presenting a united front. Nicole had known that Mom was against Opilio, but she hadn't realized that Dad was interested in going.

Too bad Mom was more stubborn than Dad. They'd stay trapped in Baine, and even with both her parents working overtime they'd all live in one tiny room that they had to reprogram any time they wanted to eat or sleep or have "family meetings."

"Aureliads, *please*?" Tommy asked.

"Not right now, Tommy," Nicole answered. Projecting the commercial again would make Mom even angrier and remind her to clear it off Nicole's private storage, which hopefully she'd forget to do.

Tired of being ignored and denied, Tommy threw a screaming, kicking, flailing tantrum. Nicole pinged against the sound barrier until Mom and Dad came over to calm him down.

Saturday morning, Nicole sat in bed with the mini mint cube in her lap, staring at a wall-projected list of pod departures and arrivals. Grant's pod had departed forty-seven minutes ago. Wormhole travel was instantaneous, but it took time to get the pods up the elevator, launched into the wormhole, and unloaded on the other station. News of a pod's safe arrival then had to be brought back to Earth on a returning pod.

The lists updated about every five or ten minutes as pods arrived back at the top-side stations all around the world. Earth's remaining cities shared the updates brought back by each pod. G114 was lost, G115–G122 made it through, G123 was lost. The next thirty-three pods all went through. G149, the pod that Grant's family was on, made it.

Grant sent her a message a few pods later, "Not tasty enough to be wormfood, ended up as wormshit instead."

Nicole laughed harder than the old joke merited; she'd been more worried than she realized. The sound woke Tommy, and Nicole cursed herself for being too lazy to set up a sound barrier around his bed. Mom and Dad were working the weekend, *again*, leaving her to watch Tommy all day.

She sent a message back to Grant, “Too bad you weren’t worm barf, then we could hang out today.”

She watched cartoons with Tommy while she waited for an answer, but nothing came. Someone pinged the door. Nicole read the ID—space allocation services. Damn. She opened a small window in the top of the door.

“You’ve been reassigned to a new homespace, follow me please. We will ship your personal items separately.” A young woman wearing the lime green uniform of city officials stood outside the door.

“My parents are both at work,” Nicole said.

“You’ve been reassigned. I will wait while you contact your guardian for permission to come with me.”

Nicole called Mom, who double-checked what was going on and told Nicole she’d have to go. It was their fourth reassignment in six months, and every time their room was smaller. At least this time they stayed in the same building. Nicole held Tommy’s hand as they followed the woman down a long corridor and then three floors up on the elevator. A box arrived a few minutes later with the family’s personals—Dad’s ancient paper copy of *The Hitchhiker’s Guide to the Galaxy*, a few old game cubes, a stack of ancient datachips, and a yellowed paper packet of broccoli seeds. Seeds that would never sprout, because Mom wasn’t brave enough to take the risk.

Tommy began wailing that he didn’t like the new homespace. Desperate to get him to shut up, Nicole showed him the Opilio commercial while she studied their new room. She paced the length of the walls, and sure enough, it was smaller than the old one. This had to stop. Mom might not see that life on Opilio was better for the family, but Dad thought so. If she and Tommy went first, her parents would have no choice but to follow, and the whole family would be better off.

Nicole reprogrammed her clothing templates to the default.

Tommy stared.

“Big trouble,” he told her.

“Come here, I’ll do yours.”

“I do it.” He reprogrammed his outfit. Nicole hadn’t realized the little squirt could dress himself.

The default elevator wasn’t quite close enough for Tommy to walk, so Nicole took him on the blue-line moving walkway. The breeze from the moving belt wasn’t enough to sweep away the odors of sweat and perfume. They passed a lot of buildings, mostly academic offices and classrooms by day, residential space at night.

When they got off the walkway, Tommy pointed at the metal elevator tube, extending up all the way to the top of the city. “Up?”

“Yeah, it’s an elevator, like we have in our building,” Nicole explained. “We’re going up.”

Hundreds of defaults stood in a line that spiraled out from the base of the elevator and filled the surrounding courtyard. They huddled together in clumps, periodically trudging forward as the line moved. They didn’t look happy to be leaving Earth, but surely their lives on Opilio would be better than the default gray nothing they had here.

Nicole made her way to the back of the line, dragging Tommy along behind her. A pod filled up and made a low rumbling noise as it accelerated up the elevator tube toward the surface.

The woman in front of them had a grandmotherly look about her, with hair exactly the color of her default-gray jumpsuit. She leaned heavily on her walker as the line moved forward. When they stopped, the woman looked back at Nicole. “Aren’t you a little young?”

“No.” Nicole turned away, embarrassed that the old woman had caught her staring.

"I'm three," Tommy said.

"That's a good age to be," the woman told him. Then, to Nicole, "No need to get snippy, I wasn't passing judgment."

Nicole smiled in a way that she hoped was polite without inviting further conversation.

"I'm Sorna, and," she waved to a boy standing in front of her in line, "this is my grandson, Christopher. Fine boy. About your age, maybe. Fifteen, are you?"

"Fourteen," Nicole admitted. Did defaults have to be of age to ride the elevator? The uniformed officials that were milling around didn't seem to be checking anybody's ID. They were busy directing the movement of the line and keeping the peace.

Christopher had his back turned and muffs over his ears. Not muffs, Nicole realized, but headphones. He wasn't wired with implants. Probably most defaults weren't, it was expensive. Sorna was staring at her.

"I'm Nicole. This is Tommy." First names wouldn't be enough for Sorna to figure out they weren't supposed to be there. "You said your grandson is fifteen? He looks older."

"Sixteen. When you get to be my age, there's not much difference between sixteen and fourteen. I got grandkids from three to twenty-two. Lots of family here in line. That's Christopher's dad there at the front end of the family, never could abide that man." Sorna waved toward a surly-looking man about thirty people ahead of them. "Since my daughter Evie died, he's done nothing but drink and piss—excuse my language—and now he's got little choice but to go to the colonies."

"There's so many of you," Nicole said.

Tommy nodded. He liked to play as though he were part of grown-up conversations, even when he didn't understand what people were saying.

"A bigger family means more mouths to feed, more rent to pay, and more medical bills," Sorna snapped.

"Sorry." Nicole hadn't meant to make her angry.

"No, you didn't mean anything by it," Sorna said. "I failed them. I always worked a couple of jobs, sometimes three, but it was never enough. We're a sickly lot, too much medical debt to ever hope to pay it off. It'd almost be a blessing if the worm takes us."

They stood quietly for a while, long stretches of waiting punctuated by occasional bursts of movement. Nicole fished a couple of protein bricks out of her purse and gave one to Tommy while she munched on the other one. It was time for his nap, and after a while he started nodding off every time the line stopped.

"What happens if you don't all end up in the same pod?" Nicole asked.

"We'll go separate," Sorna said. "We tried to count up, but people come and go from the line . . ." Mom would've insisted that the whole family go together. The thought made Nicole pause. Mom would be madder than a topside snowstorm when she found out what Nicole was doing. Why couldn't she see that living in the clouds was better than being buried under the surface? Ninety-five percent safe was good odds and the reward would be worth the risk.

Nicole stared at the gray metal "sky" of Blaine. The upper dome was dotted with yellow lights that illuminated the city for daytime. There weren't any windows to the surface; there was nothing to see up there but snow. She thought about the ad Grant had given her. What a wonderful thing it would be, to live in a floating city with huge viewing windows onto a beautiful sky.

The line moved forward.

Most of Sorna's family got into a pod, but it filled up. The doors closed and the pod accelerated up the elevator shaft. Another identical pod rose up from below. Plain metal spheres dotted with small windows. No point to anything fancy, since eventually all the pods would be eaten by the worm.

The pod doors opened and the line moved forward. The wheels of Sorna's walker scraped on the metal floor inside. Nicole followed her. Christopher was in their pod too. He made no sign of knowing or caring that his father had gone in the other pod.

Following the instructions that blared over speakers inside the pod, everyone strapped themselves into seats mounted in a big circle along the curved walls. Sorna pushed a button on her walker, and it folded up small enough for her to slide it into the bin under her seat. Nicole sat down next to Sorna and strapped Tommy into the seat on her other side. Tommy was only half awake as they got into the pod, and as soon as he was belted in his head drooped over to rest against Nicole's arm. He drooled a big blob of spit onto the sleeve of her jumpsuit.

At first, all Nicole could see through the tiny windows was the inside of the elevator tube rushing by. When the pod reached the surface, the elevator tube opened up into a set of vertical tracks. There was a brief glimpse of snow and a howl of angry wind, and then they were above the clouds.

Tiny points of light appeared against the darkness. Stars. Nicole called up some skymaps and saved them to the not-so-private local storage on her implant, alongside Grant's commercial. She'd seen skymaps before, but she hadn't realized the stars would be so small.

"Shouldn't we have stopped by now for the topside station?" Nicole asked, peering at Sorna through the dim light inside the pod. Her arm was falling asleep from the weight of Tommy's head.

"Oh, child, you got on not knowing? They don't let us off until we're through the worm. Last thing they need is a bunch of defaults clogging up the station."

"Oh." Nicole tried to stay calm. She thought she'd have a last chance to bail out—to cut things off if she'd had enough adventure. Grant had told her how it worked with the private pods, and she hadn't known the default elevator was any different.

Nicole hadn't even sent a message to her parents to tell them where she and Tommy had gone. She'd planned to do that from the station. She started composing something, then realized her connection to Baine was gone.

The interior light went out.

"That's normal," Sorna whispered.

"Quit talking to the stow, Gran," Christopher said. "She got herself into this, and worse, she brought some unsuspecting toddler with her. She's just some rich kid playing default for a free vacation. When we get to Opilio, she'll message her family and they'll send money to ship her precious ass home in a private pod."

"I will not," Nicole snapped. Her parents had enough money for a private pod to Opilio, but they weren't so well off that they could afford the price of a trip back to Earth. Oh wormshit, what had she done? She and Tommy couldn't go back now, even if they wanted to.

Sorna patted her on the shoulder. "Christopher, be nice. Scared is scared."

"It makes me mad, that's all. Serve her right if the worm eats her on the trip home."

"Christopher," Sorna said. "Go back to your music, and leave the poor girl alone."

"She should've left us alone," he said.

The walls vibrated, and the force of the launch pressed Nicole down against her chair. Through the tiny windows, she could see Earth's horizon stretched out in a fingernail crescent of white and blue.

Their pod detached from the shuttle. "Is that supposed to happen?"

Sorna nodded. "Watch Polaris."

"Why?" Nicole found the point of light that was labeled as the North Star in her skymaps.

"That's where they anchored the mouth of the worm."

The star moved.

It jumped to the left of where it had been. No . . . it split. There were six other stars, in a circle around the spot where Polaris had been.

"Lensing," Nicole whispered. She'd learned about it in school, the way the gravity of the wormhole bent light around it to create a ring of stars. Back then she'd thought the ring of stars was pretty. Now they were the teeth of the open-mouthed worm about to eat her.

Everything she and Grant had joked about was real. Would she be wormfood or wormshit? The walls of the pod clanged and rattled. Nicole clutched her purse in her lap. She could feel the corners of her mint-plant cube pressing through the thin fabric. Around her, people joined hands with their neighbors, praying. Sorna reached out and Nicole took her hand. She put her other hand over Tommy's, holding his tiny fingers as he slept.

The pod passed into the center of the circle of stars.

Discontinuity.

Nicole stared out the window. Something had happened, an odd sort of blink, but not with her eyes. The view was much the same, except she couldn't make out the worm teeth stars, and her skymaps didn't recognize the constellations.

A cheer went up among the other travelers.

"Smile, dearie, we made it," Sorna said.

Nicole searched the sky for the bright colors of the Crab Nebula, but all she saw was stars in an ordinary black sky, "Are we in the wrong place? Shouldn't it be more colorful?"

"Arrivals go through the space station, rich girl. Those orange skies you saw in all the ads are only once you get to the planet," Christopher sneered.

"But aren't we in the Crab Nebula?"

"Not as pretty up close as it is from far away." Christopher glared at her. "Which is true for a lot of things."

The pod docked with the Crab Nebula's worm station, and the doors opened onto a narrow metal hallway. A pair of station officers came into the pod to make sure everyone got off. Grant was right, everyone was welcome in the colonies, but travel back to Earth was strictly regulated. Earth was overpopulated, and they didn't want colonists coming back home.

This would be their home now. Hers and Tommy's, and her parents' when they came. There was no doubt in Nicole's mind that they would come. The only question was how many years she'd be grounded once they arrived.

The gravity on the transfer station was wrong, too low, but one of the station officers handed her a set of magnets for her shoes, and a smaller pair for Tommy. Tommy wasn't all the way awake yet, so he didn't complain when she put his on for him.

"Please follow me to the immigration area. There are screens with recent arrival information, if you have need to know."

The group moved in a herd, packed together, following the officer. They passed a window, and Nicole caught her first glimpse of Opilio, angry red with swirling storms. Tommy pulled on her hand, he wanted her to lift him up so he could see better, but the crowd pushed them past the portal. He grabbed at Nicole's arms and dragged his feet and whined until she picked him up and carried him, which actually wasn't too bad in the lighter gravity.

"Miss Blackensmith?"

Nicole turned, then realized that she hadn't told anyone in the pod her last name. A young woman in a dark blue uniform approached her. The uniform was too big, and it bunched up in odd places.

"Miss Blackensmith," the woman repeated. The voice didn't sound female; maybe the officer was male. "We will go to a private waiting area. Your parents—"

"I'm fine staying with the group," Nicole interrupted. "No need for special treatment."

"Me too," Tommy added, finally starting to perk up. "Special treatment."

Nicole walked with the rest of the group, carrying Tommy piggyback. The officer followed her. The hallway opened into an open chamber. A few people gathered near a large window with sweeping views of the planet below, but everyone else went to the arrival screens. The data on the screens was much the same as the feed that Nicole had watched on her implants back on Earth, listing the status of all the latest pods. Nicole tried to establish a connection, but her access codes from Baine didn't work here on the station.

Nicole saw Sorna and Christopher studying the arrival screens. The old woman leaned against her walker with one arm and hugged her grandson with the other. The other pod, the one with the rest of their family, hadn't made it.

It was one thing to know that not every pod went through, but Nicole had seen those people. She tried to call up their faces in her memory, but she only remembered one, Christopher's father. The boy who had been stoic and surly the entire trip was sobbing. She wanted to say something, but she didn't know what to say. He probably wouldn't have wanted to hear it from her anyway, even if she could come up with the words.

"Miss Blackensmith, you must come with me now."

Nicole spent the night with Tommy in one of the station's private waiting rooms. Her parents had needed time to settle their affairs on Earth, and Mom sent firm instructions that they were not to leave their room. Nicole wanted to explore the station, but given the amount of trouble she was already in, she stayed put.

"I'm bored," Tommy said.

Nicole didn't answer. Tommy had declared his boredom once every two minutes for the last half hour. Nicole gave him a game cube from her purse, but he wasn't interested unless Nicole played too, and she wasn't in the mood to entertain. Mom and Dad were on their way, which was exactly what she'd wanted, but after seeing that the other pod—the pod full of people she'd seen with her own eyes—hadn't made it, she couldn't help but worry.

The waiting room windows were pointed away from the planet, and Nicole could see the region of sky where pods appeared. The tail of the worm, the white hole. The place where the worm would shit out her parents.

Farther in the distance was the mouth of the Earthbound worm. A pod, probably empty since so few people actually traveled back to Earth, disappeared into the black hole.

A few seconds later, a different pod exploded into existence, reentering the Universe in a bright flash of fire. The pod decelerated as it approached the station. The first few times it had been interesting to watch, but a couple of hundred pods had come and they were still waiting.

"Can we go home now?" Tommy asked.

Nicole shook her head. She pulled the mini mint cube out from her purse. It looked much the same as it had on Earth, unaffected by the lower gravity of the station. Somewhere in the red and orange clouds below them, Grant was getting settled into his new home. Would he want the plant now that she was here? She couldn't believe it was only the day before yesterday that they'd been arguing over the plant back on Earth.

The door to the waiting room opened.

"Daddy!" Nicole and Tommy cried out in unison. She let Tommy down, and he wobbled over to Dad and glommed onto his leg.

"Where's Mom?" Nicole asked, peering into the hallway behind Dad. "I know she's probably really mad, but—"

"Rosaline isn't here?"

Nicole shook her head.

"She said it would be better. With the statistics. We had to come separately. I told her to take the first pod. I should have gone first."

"Mommy?" Tommy asked, hesitant. He started to cry, agitated by Dad's lack of composure. Nicole couldn't process what was happening. They were here to start their better life, with gorgeous sky views of orange clouds and aureliads. Mom would come around to the idea eventually.

"No, Tommy, Mommy can't be here."

Mom had tried to come. She was against the whole thing from the start, but she'd still tried to come, once she knew that Nicole and Tommy were here.

"This a bad place," Tommy said. "I want to go home."

"Shut up, Tommy."

"Nicole—"

"Shut up!" Nicole was frantic, angry. This wasn't how it was supposed to work. Mom was supposed to yell at them, to tell her what a stupid reckless thing she'd done. She couldn't be dead. Mom would never get on a pod and risk becoming worm-food. She was on Earth, she had to be, fretting and worrying like always.

Nicole could almost convince herself, until she looked at Dad's face. "I'm sorry. I'm so sorry."

"I wish you'd been more patient, is all. If you'd given me a little more time I might have convinced her, and we could have all come together." He picked up Tommy, who kept calling for Mom as if he could magically summon her by repeating her name.

They took the shuttle to one of the floating cities. *Dawn Treader*. Mom would have enjoyed the ride, in spite of herself. The orange sky was cut with shifting bands of blood-red aurora, streaks of color where the radiation from the Crab Nebula was blocked by the atmosphere of Opilio.

They descended into the swirling storms, and the shuttle bounced and shook. Underneath the more turbulent layers were the floating cities, hazy in the distance. The shuttle pilot pointed to something, off to the right.

"Aureliad," Tommy whispered.

It was rusty orange like the sky, and as big as the floating cities. The aureliad drifted in the currents of the sky, tentacles trailing behind it for miles. It swept the sky for planktos, tangling its prey in its tentacles like the jellyfish from which it got its name.

Nicole clutched her tiny mint plant, safe inside its cube. She was supposed to give the mint to Grant, but if she could find a place to do it, she would use the tiny plant to start a garden for Mom. ○

CANDY FROM STRANGERS

Jay O'Connell

The author tells us, “Morgan, the protagonist here, has been kicking around in my head for a long time. He’s one of those people you get to know if you hang out near MIT, along with cryonicists and cypherpunks, the socially challenged, the brilliant, the driven, the strange, and the awkwardly beautiful. Or as I like to call them, my people, impossibly looking for the elusive Happily Ever After.”

Morgan knew the woman standing alone on the platform was trying to kill herself. But she wasn’t any good at it.

She opened a locket on a chain around her neck and bit her lower lip. The ground trembled and the breeze of the approaching commuter blew back her tangled shoulder length hair. Two trains had passed while she stood frozen at the yellow rubberized safety lip of the platform. She’d taken a step back but now seemed paralyzed.

He wondered if she had the balls to take the plunge—but she was a woman. The eggs then.

Headlights flared in the darkened tunnel, the train decelerating as it thrummed into Back Bay Station. The woman’s features calmed as she took a step forward. Morgan knew that look.

Shivering, Morgan took a final drag on his cigarette and ground it out under a leather boot heel. He adjusted his glasses, black horn-rim Serendipity Overlays, snapping them to life with a tap at his temple. They booted in an eyeblink, flashing green status icons along his peripheral vision.

Morgan reached her just as she had swung one foot over the edge. His hand tightened around her right arm near the shoulder, jerking her back as the commuter’s passage sluiced dusty summer air over them.

“What’s the rush?” Morgan shouted over the roar of the decelerating train.

Frowning, she pushed a mass of unbrushed, dirty-blond hair away from her face.

Morgan’s glasses identified her in the time it took the train to grind to a halt. She was Ariel Rosenberg-McCormick-Floyd-Worrell, unemployed, unmarried primary school teacher. Backdoors in a half dozen online systems flickered open yielding up Ariel’s identity without a qualm. Flashing text cascaded into Morgan’s local cache, social media accounts, credit records, medical records, legal files . . . in a few seconds he had everything. Didn’t look like the anti-depressants she was on were doing much good. Oh. She’d signed her divorce papers one year ago to the day. An anniversary.

“You were late,” Morgan said. “You were going to bounce, and end up in the hospital. In a lot of pain. For a long time.”

Ariel blinked up at him.

"Women do this better with poison." He handed her a transparent rectangle of plastic edged in silver, his card. A brilliant pebble of red hard candy was taped above his name and disposable net address.

She took the card.

He grinned. "The candy has a poison center. Quick. Painless. Let me know what you decide. . . . Well." He ran his hands through his curly black hair, bending at the knees, to get a better look into her eyes. "I scan the obits. You can't really tell me. But I'll know."

She stared at the card, tears forming and welling over her lower lids, her face flushing in humiliation. Good. Any emotion was good at this point.

He kissed her forehead, his lips warm against her skin, tasting the salt in her sweat with the tip of his tongue, catching a whiff of her scent, feminine musk and despair. "Bon voyage," he whispered.

He spun on a scuffed heel and stalked off down the platform, devouring the distance in long even strides, motorcycle boots clicking against the tile like a metronome.

"Who do you think you are?" Morgan heard the sudden fury in her tone, and bit his lip, hard, to keep from laughing. Bingo!

"Who do you think you are?" she yelled.

He shrugged without looking back.

She would never know.

She used the disposable address on the card to suggest a meeting the following day in Harvard Square.

"You're still alive," Morgan said. "Technically. What do you want to do today?"

She blinked, not looking at him, elbows on knees, cleft chin in her hands. She hadn't washed her hair and was still wearing the same recyclable dress. Not a good sign. Stuck on the threshold.

"I mean, you have the candy. Unless you want to give it back? Strange, carrying it around, don't you think? Like walking past an open window."

They sat in the bricked pit near the Harvard T stop across from the tourist information kiosk, watching a pair of bladers cavorting back and forth over the sooty brick. A blonde girl in a skintight MirrorSkin launched herself into the air from the top of the steps across from them. She grinned, her hair fanning into a shimmering halo, reflections blobbing along contours of female chrome, Morgan's black leather overcoat, Ariel's cheap floral print, the dirty red brick, blue sky, and puffy white clouds.

Ariel cracked a smile. "If I'm going to die, I could do anything, beforehand. Anything."

Morgan nodded.

She put her hand on his knee and squeezed. Morgan flinched, brushing her hand away.

"If I wasn't flat broke, I mean, I could do anything."

They sat awhile in silence.

"What is it you do, exactly?" Ariel asked.

"What do I *do*?" Morgan had always found this question infuriating.

Morgan gestured at a swarm of commuters emerging from the MBTA station. "Look at them, half alive, half dead, afraid of love, *commitment*, afraid of sex, joy, afraid of bioterrorists and suitcase nukes. Afraid to die! Afraid to live! They're afraid of the weather—Look at them!"

"Who in the name of all that is holy would do the things they make themselves do, day in, day out? Sitting in cubicles staring at screens, going to meetings, jiggering the quarterly report!"

"What makes me different, from a doctor, from a therapist, from a *life coach*, is that I will grant you that sometimes, death is best. Sometimes, it's a logical, rational

choice. Even for a young person. Even for a healthy person. Sometimes, what you know, in your heart, in your bones, tells you it is best simply not to be. I don't lie about that. That's what I do. What I don't do, I mean."

Ariel looked unimpressed. "I meant, what do you do for a living. For money."

"That," he said. "Is a petty question. Maybe I'm rich. Maybe I'm from a wealthy family."

Ariel snorted. "No," she said. "You aren't."

Morgan's face burned. She was right, of course. His people had been strugglers, immigrants, vagabonds, for a thousand years.

"Would ten thousand in Cayman digital change your mind, foolish girl? I'll give it to you. If you'll be honest with me. And yourself."

Ariel's brow furrowed. Adorably, Morgan had to admit. Odd, he thought. Usually, *he* took *their* money. That was how this had started, anyway. His game with the suicides.

Something loosened in Morgan's chest. He snaked his arm around her waist, the softness of her flesh a shock against his forearm. He'd devoured her data, knew her as well as anyone in the world. She'd been shit on pretty thoroughly. Husband dumped her after they had lost their infant daughter to an autoimmune disorder. She'd been downsized two weeks later along with about half the teachers in the state as the new TeachNet consoles had gone live. A bad convergence, the kind that killed. Her state-appointed counselor had the IQ of a house plant. Morgan had killed two of his patients already. And saved four.

She was right on the edge. "Do you want the money?"

Ariel blinked, pushing back her hair, sitting up a little straighter. Ignoring his arm around her. "I'm not going to sleep with you."

Morgan snorted.

"You're right about that."

Ariel let loose with an easy smile. "Okay. I'll take the money." She was pretty. Morgan hadn't noticed this before, with all the slumping around in the crumpled dress.

"But I'll hang onto the pill."

"It's not a pill," Morgan said, an edge in his voice. "It's candy. They're called red hots. I don't like pills. Or doctors. Or medicine." He shook himself.

"Candy then," she said. "It's comforting."

Back in his apartment Morgan grunted as he lifted himself up and out of his legs. He kept his upper body fit, what was left of him, arms and pectorals sharp-edged and muscular.

His prosthesis came away just below his navel with a moist sucking sound, the fleshy pink fittings glistening, smelling of stale sweat and feces. He wiped everything off, replaced his catheters with the hated strap-on plastic bags. Veins crawled on his right bicep as he supported himself with the one arm.

A gesture sent the pull bar swinging, depositing him in his unmade bed. He settled into the tangled mass of sheets, sighing. Long day. His legs walked over to the charging socket beside the clothes hamper, stepping carefully onto the copper prongs, the black leather boot-heels clicking together as it powered down.

He tapped his glasses to life, scanning the obits. One of his clients had eaten his candy. He'd cut him off over a month ago, when it became obvious he was hopeless.

Most people were.

But every now and then he found one. Like Ariel. Dead but still alive somewhere deep inside. He saved them. Or killed them. Money was no longer an issue. One woman had been very grateful, and very rich, and now, Morgan shoved them off their fences for the sheer fun of it, for the thrill, for, for, for . . . well. There wasn't anything else he felt like doing.

What would Ariel do with the traceable ten thousand he'd given her? The ex-husband? Would she have him killed? That would be interesting.

Morgan smiled and took off his glasses, turning his face to the pillow. He told the apartment to darken. The husband probably deserved death.

Many men did.

Morgan and Ariel sat in the cool shadows near the playground, watching a group of children playing in the sand pit. It had been a traditional public school before becoming a TeachNet facility. Ariel had worked there.

"The terminals went in and they didn't need us anymore." Ariel said quietly. "Just janitors, food service, and security."

Morgan grunted. Work didn't interest him overmuch. "I could buy you a job."

She considered it. "Isn't that ridiculous? I mean . . . for the amount of money the job would cost couldn't I live off the interest?"

Morgan laughed. "You wouldn't want to. You need to work. Most people do."

Ariel had washed her hair (but hadn't brushed it), changed into a new, but just as unflattering disposable dress. "How much do you know about me?"

Morgan shrugged. "Everything. What do you care? You're going to kill yourself, remember?"

"How did you find me?"

A low chuckle. "Walk down any street, you see a dozen people. Somebody is having a bad day. Walk by a hundred. Someone is having a bad month. Walk by a thousand, ten thousand—easy to do, in a big city. One in ten thousand will be on the brink of suicide."

He touched his glasses. "These help—but I hardly need them."

She rested her hand on his thigh. "You give depressed people suicide pills?"

Morgan marveled at Ariel's lousy taste in men.

"When the happy drugs don't work. When the therapy doesn't work. You've done that, too, haven't you? The support groups and web dates and volunteer work and clergymen. Booze and time and the friends that sound so empty you can barely stand to talk to them anymore. Nobody understands, really, in the end. Nobody."

Ariel nodded.

Morgan pushed her hair away from her neck, running a finger along her jaw. She didn't turn toward him, or smile, but the glasses showed an elevation in facial skin temperature, a quickening of her heart. He watched her breasts rise and fall with her breathing, felt the useless quickening of his own desire. Watching her breasts rise and fall disturbed him, actually.

He did it anyway.

"What are you going to do with the money I gave you? Kill Michael?"

She started. "Probably not. I contacted a service, found his new address, and asked about a price. I've never . . . worked with BlackNet before. It wasn't very expensive."

Morgan nodded. "Free market competition and digital anonymity. Made this country great again. So, we won't kill Michael," he let the disappointment show in his voice. "What do you want to do?"

She looked at him, unsmiling. "I want to go dancing."

"Hmmm." Morgan made non-committal sounds, turning his glasses into mirrors as he searched for and found a dance program demo he could run with his prostheses. He stroked his chin while it downloaded.

"Dancing," he murmured. He'd loved to dance. A long time ago.

He stood, and capered a bit—or rather his prosthesis did, boot-heels clicking against the brick.

Ariel turned on her smile, and Morgan shuddered inwardly. Beautiful, when she wanted to be. His solar plexus tingled—if he'd known she could do this to him he probably would have left her alone.

Morgan held out his hand.

They walked through the square to the park, where they found a four-armed street musician with a fiery halo of electrified hair the color of blood. He strummed an acoustic guitar while each ancillary hand fingered a mini-keyboard strapped to each thigh, the music bright and airy, ballads from twenty years back that both of them remembered.

Ariel swayed to the music, Morgan uncomfortable at the sight of her body, lush beneath the unflattering dress, laughing now and then at the stupidity of the lyrics. The ancient songwriter rhymed “love” with “above,” and Morgan giggled, too.

He swept her into his arms, and they waltzed, sending up a spray of pigeons as the sun sank and the sky deepened into a Maxfield Parrish blue. The summer night smelled like fried dough and incense and Ariel's sweat and perfume.

Morgan's legs danced. He even took off his glasses and tucked them in his jacket pocket, blinking into her smiling face in the twilight. He didn't need the glasses anymore. He knew Ariel. She was a love junkie. They were hopeless. Always.

She'd kill herself when he dumped her.

The fool.

The following day Morgan was taken aback by Ariel's next transaction. She had washed his cash through an offshore BlackNet server. Now he had no idea what she was doing with it. This wasn't fair.

So he watched her through the security cameras in her condominium, trying to figure out what she was up to, exactly. He'd paid handsomely for the back-door keys to this particular brand's systems years ago. Came in handy.

Ariel sat at a kitchen table in a tattered red bra and panties. The candy lay on a stack of printed forms, flanked on either side by a disposable magnum one-shot handgun, and a chrome wand the size of a stick of dynamite.

She opened her locket, and this time, Morgan was able to zoom in on it, to catch a glimpse of the tiny flickering video inside. A baby smiling. She smiled back and snapped the locket shut.

Her one hand—delicate, that hand, despite the grime under the fingernails—tapped at a tablet computer. He couldn't see the tablet from any of the condo's cameras. This annoyed him. It had also been hardened with military spec encryption. This annoyed him even more. The doorbell rang.

“Come in,” Ariel tapped the tablet, and the door clicked open.

The man who peeked his head past the jamb looked a little old to have been Ariel's husband. No hair to speak of, a dusting of buzz-cut silvery stubble. Sharp features, weak chin. He wore a gray sweatsuit.

“I got your message.” His eyes traveled the length of her body. He stepped fully into the apartment.

She held the one-shot and the wand behind her back, standing, her weight on one leg, her shoulders thrown back. The man looked uncertain.

“I've been lonely,” Ariel said.

The man shook his head. “We've been through this, okay? Look. You said there was something to sign, about the health insurance,” he coughed.

Ariel was unfazed. “The forms are on the table.” She'd let him stay on her policy after the divorce, Morgan saw. Had made payments in his name.

She brushed past him to close and lock the condo door. Morgan wiped his brow, adjusting the glasses, nestled in his sweaty sheets.

Michael was frowning at the forms.

"You're taking me off the policy? You called me down here to cancel my health insurance?" He looked up to see her pointing the one-shot, the maw of its barrel the diameter of a ping-pong ball.

"Oh," he said.

"I want to ask you a question."

"Oh," he said.

"Sit down," Ariel whispered. "Or I'll blow a big hole in your guts."

He backed away into the living room. "You wouldn't?"

"Honey. All the time we were together. All the time you were sleeping with Julia. All the time I was pregnant and supporting you and the band, driving the stuff around in the van, did I ever lie to you? Ever?"

"Oh," Michael said.

"This shoots one bullet, so I'm supposed to hit you in the guts, the center of your body mass. Rhino charge, they call it. Expanding plastic load. Won't go through dry-wall, hurt anyone else, but it will rip you in half."

She dimpled. "Isn't science wonderful?" Morgan checked, yes, she'd taught science.

Ariel pushed him down onto the sofa and straddled him. As she pressed the chrome wand against his neck. Michael's face did things that made Morgan smile.

"This is a TruthSayer. A kind of polygraph. They don't always work, but I don't care, if it looks like you're lying, I'm going to shoot you." She wiggled the one-shot.

"Now. I know you said that you thought having the baby was going to help the relationship, and that you're sorry that things turned out so bad, but that really, I was the one with the problem. I was the one who couldn't let go. That you had nothing to be ashamed of.

"And I always wondered, did you *believe* that? I always thought you were basically a decent person and it's been driving me crazy. That you think what you did was okay."

"This is dumb," Michael said, struggling to get up.

Ariel sighed. "I'm going to kill you then."

She pressed the one-shot against his forehead.

"Yes!" Michael made a funny sound, a cross between laughter and a sob. He screwed his eyes shut. "I'm ashamed!"

He was crying now. "I have nightmares about you."

Ariel smiled, and watched him cry.

"That's all I needed." She straightened and adjusted her bra, which was too small, Morgan noticed.

She stroked his face with the one-shot. "Now sign the forms and go home, before I change my mind and kill you. Just for fun."

Ariel didn't use the one-shot on herself afterward, which Morgan thought was a little odd. Instead, she just fiddled with the damn tablet that he couldn't snoop. Really unfair. She'd spent his money securing it.

Morgan lifted weights, reading the news in his glasses, sweating comfortably. While pressing 190 pounds, he called up Ariel's image, rerunning video of her face while they danced. What a smile. What a fool. He got the bad feeling—a nameless itch that could never be scratched. He shut off the video. He checked her location via her phone's GPS only to find she had left it in her apartment. He checked her security cameras. She wasn't home.

Oh well, he'd scan the police and EMT feeds. If she ended up in the Charles it might be days before he knew her fate. It was frustrating. He finished his workout, took a sponge bath (he hated baths, and he couldn't shower in the prosthesis), and turned in.

Some time later his apartment intercom woke him up out of a sound sleep. "Who's there?" Nobody ever visited. He had no family. He had no friends. Only his . . . patients? Victims? And he hid from them behind disposable addresses.

He fumbled for his glasses and checked the video feed from his front door.

It was Ariel. She'd been to a hairdresser, her new cut asymmetric, attractive, framing her elfin face exquisitely.

"I need more money."

Morgan didn't know what to say. Which almost never happened. "How did you find me?"

"Private detective. Cleaned me out. So I need more."

At a loss, Morgan buzzed her in.

He clambered into his legs as she took the elevator, pulling on a baggy T-shirt to cover the seam, and opened the door at her knock.

She glanced at the dirty laundry and pizza boxes and bare walls, her eyebrows frowning at the monkey bars throughout the apartment. She smiled at Morgan and took off her long coat. She was wearing the locket, and nothing else.

Morgan swallowed. She was beautiful, an hourglass of faintly luminous pale flesh shining in the half-light. Morgan liked it dim, the glasses worked better that way. She had a diamond stud in her navel.

She pulled his glasses off and tossed them in a pile of dirty clothes. "The candy. It's like a placebo. It's not poison. It's a metaphor."

Morgan suppressed a chill. "No."

She shook her head. "No one could be so callous. You pretend not to care, but you do."

Morgan shuddered. "No, I don't care. Well. Not like you think."

Ariel flowed into his arms, wrapping him in her soft warmth, her breasts soft against his chest. She grinned up at him, tilting her head back. "It's just candy." She laughed.

She extracted the candy from the silver locket at her throat, and held it between thumb and forefinger.

Morgan coughed, his head beginning to throb.

Ariel smiled, standing on tiptoe to kiss his dry lips, licking his chin, nibbling down his neck, sending electric tingles down his spine. Oh, if only his spine went down farther . . .

"Candy." She laid the ovoid on her tongue and closed her mouth.

"Um. Do you want to die?"

Ariel shook her head, her hands fumbling with his belt buckle.

Morgan stood very still. "Please don't do that."

She unzipped his jeans, working his pants down around his ankles as she went down on her knees. She ran her finger along the seam, where Morgan ended and the plastic began, across the bulge of his crotch. She jerked his underwear down . . . Morgan's pubic bulge was as smooth as a mannequin's.

"I have the attachment." Morgan's voice caught. He cleared his throat. "The neural connect, a spinal shunt. It works. But. It doesn't feel right." He squatted, staring into Ariel's eyes.

"Nothing feels right. For years now. Open your mouth."

She hadn't swallowed. She wasn't as stupid as all that. Morgan removed the candy. "Coating intact. Good." He tossed it in the wastepaper basket.

Ariel folded her arms over her breasts. "How many have you killed?"

"I don't keep track."

She shook her head. "You're a jerk. I was falling in love with you, too."

"That's none of my business." He pulled up his pants, zipping his fly with an angry flick of the wrist. "That's not what I'm for." His eyes watered down his cheeks, hot and salty.

"Stupid," he whispered. "You're all so simple. Easy to fool. You all want to live, really." "You don't." Ariel said.

The silence stretched for a dozen heartbeats. In a sickening flash, Morgan knew she was right. He was tired, sick to death, of this, and every other game. He laughed out loud. "Touché!"

Ariel let her arms fall to her sides, sighing loudly. She walked over and rummaged in the wastebasket. She handed him the sticky candy.

Morgan looked at it. "Better than jumping in front of trains. You know, they can save you from that, sometimes. Even if you're cut in two."

Ariel kissed him deep, her small hands snaking up inside his shirt, roving over his chest, moving in circles around his nipples, playing with his navel.

Morgan moaned, feeling so very clearly where his body ended and the plastic began. He held her, smelling her hair, shampoo and sweat. He bit the candy open.

Morgan's prosthesis kneeled. It wouldn't take long. He nuzzled his head in her breasts, the softness warm like heaven. The blackness edged in from his peripheral vision, his heartbeat slowing. Regret flooded him, at the last instant. She'd cheated! Surprised him. Overwhelmed him. She hadn't given him a chance. He'd never had a chance!

"Dirty, crazy bitch," he murmured into her belly. He bit the diamond stud in her navel.

She stroked his hair, as he slipped away into nothing.

He awoke to harsh sunlight gushing through the apartment's picture window. Ariel had torn down the blinds, which didn't open. She sat, tailor fashion, at the foot of his bed, reading one of his antique books. She looked up and beamed at him.

"I knew the candy was poison. I had it tested. I swapped it with a date rape drug."

Morgan nodded. "Clever." His voice creaked, grated in a throat that seemed impossibly dry. Whatever she'd knocked him out with had been powerful. His hands rubbed his temples, and found thin adhesive bandages.

She handed him an energy drink bulb, the kind packed with sugar, vitamins, and OTC stimulants. He bit off the nipple and sucked it dry. He stretched one arm, and then the other, as the drink dampened the pounding in his head. Minutes later, he was feeling better. Much better. Strangely better.

The portable electroshock unit with the face mask and oxygen cylinders on the nightstand was familiar to Morgan. The self-service psychiatry stalls in malls carried them. He recognized the disposable syringe wrappers as well, powerful, fast-acting anti-depressants, the dangerous ones with the terrifying side effects.

"You treated me?"

"What was the worst that could happen? You'd already killed yourself. So, what do you want to do today? Still want your candy? Or do you want to fuck with some minds?" She grinned. "Or with me?"

He looked at her. She smelled like toothpaste. She was wearing the tatty red bra and panties. Must have had them in the jacket pocket or something.

Morgan tilted his head, narrowing his eyes. "We need to buy you some clothes. If I have to look at you, I mean. If you want to . . . hang around. With me."

She laughed. "I'd like to hang around. With you. Now, put your legs on and come to bed. You can dress me up any way you like. Afterward. Provided you do a decent job."

She took his hands, tugging him toward his docked prosthesis. She'd found an attachment and installed it, he noticed. He had three. She'd chosen the mid-sized one. The big one was really just for show. Clever girl.

Morgan nodded, his pulse quickening as she helped him into his legs.

The great thing about dying was, you could always do it later.

At the moment, he was in no rush. ○

BUTTERFLIES

Peter Wood

Peter Wood is an attorney in Raleigh, North Carolina, where he lives with his demanding cat and wise and patient wife. “Butterflies” is his take on fifties science fiction movies, like *Tarantula* and *Them*, that were a staple of Saturday afternoon television when he was a child. He is proud to live within a hop, skip, and a jump of the NC State Teaching Forest. Pete doesn’t think anything too unusual is going on in those woods, but he hasn’t hiked there in a while.

Ruth parked her beat-up hatchback about fifty yards from Mom’s farmhouse. A giant butterfly, larger than her car, sprawled across the dirt driveway.

Casey, her brother, walked up. “Think we can handle the bug?”

“It’s not even that long.” She was not in a good mood. Her second tenure panel in five years had bombed. Nothing had pleased Professor Steiner, the biology department chair at NC State University.

The butterfly’s wingspan was greater than a school bus. The creature munched on crabgrass and waist-high pokeweed. Its stench, like rotting garbage, made her stomach lurch.

Casey laughed. “I’ll get us some help, Professor.”

“I’m still not a professor.”

“That sucks. Sorry, sis.”

He whistled and his border collie, Scooter, ran up and sat at his feet. Casey could train anything.

Ruth wondered if today Casey had even left the house he still shared with Mom. He said Mom needed the company ever since their Dad had passed away. Sometimes he had landscaping jobs. “Where’s Mom?”

“In the house. She couldn’t stand the smell.”

The front door creaked open. Wearing a long paisley housecoat, Mom stepped outside. “Are you two going to do something about the bug?”

“Yes, Mom,” Casey called out. He looked down at Scooter. “Tree.”

Scooter raced away and stopped under an enormous oak and waited for Casey’s next command.

Mom turned to Ruth. “I missed the church social today. I couldn’t get out of the driveway.”

Ruth just wanted to have a good stiff drink and forget her day back in her own apartment. “Mom, we can’t just haul the butterfly away. It has to be studied.”

Casey ran his fingers through his long hair. “You didn’t tell NC State, did you, Professor?”

“I told you, I’m not a professor.” Ruth sat down on the steps to the front porch. She hadn’t realized how tired she was. “I had to. I work there.”

"I wish you hadn't. We could have dragged it across the property line onto university property. Make them figure out what to do, instead of having them camp out on Mom's property for days."

The gate to N.C. State's teaching forest was only a football field's length away. Her deceased father, a biology professor at N.C. State, had picked the house years ago because the forest was so close. It was just like Casey to dump his problem on somebody else.

Still, Casey made sense. The university would be getting involved anyway. "I didn't think about that."

A car horn blared. A jeep pulled to a stop behind Ruth's car.

The university's entomology field team had arrived.

Professor Steiner jumped out of the jeep. He wore khaki pants and a bulging multi-pocketed vest like he was on safari. He grabbed a knapsack and motioned for his posse of grad students to follow him.

Ruth stared at Steiner. Why did they send the department chair to handle a routine entomology issue? Large insects were hardly unique. NC State catalogued fifty or sixty a year, just in central North Carolina alone.

What really gnawed at her was that nobody had contacted her and asked for her input. Somebody in the department could have asked the biology instructor who had phoned in the report to join the team.

The butterfly cocked its head and glanced at the jeep. It returned to grazing.

A bearded student in a tie-dyed T-shirt pulled a tranquilizer gun off the backseat and handed it to Steiner. The professor aimed it at the butterfly.

Steiner squeezed the trigger and a dart hit the butterfly. The creature let out a low-pitched moan and slumped to the ground.

Steiner barked orders at the grad students. They pounded knee-high metal stakes into the ground around the unconscious insect and connected the markers with billowing red tape. It looked like a crime scene.

The students unfurled a large net over the butterfly. They snapped steel cables into place, grounding the net.

Ruth walked over to Steiner and forced a smile. "Good to see you again, Professor."

Steiner wore mirrored sunglasses and flashed a perfect salesman's grin. "It was a shame your father couldn't have been at that meeting today. He would have put in a good word for you."

All Ruth could manage was an anemic, "Yes, sir."

Steiner pointed to the grad students. "I need to attend to my field workers."

Casey jogged up. "Afternoon. I'm Casey, Ruth's brother. That butterfly wasn't going to eat us, was it?"

"Your Dad had some nice gatherings out here back in the day." Steiner shook Casey's hand. "I guess your sister never told you that butterflies are vegetarians."

"Nope," Casey said.

Steiner winked at Ruth. "Did you miss that class, Ruth?"

"I've taught an upper level entomology class for five years," Ruth said.

Steiner nodded. "Oh, that's right."

A breathless grad student with long dreadlocks ran up. "Sir, the insect's secure. We're ready to take tissue samples."

"I'll collect the samples," Steiner said.

The student blinked. "Um, sure, Professor Steiner."

Ruth had been part of many an entomology team. Taking DNA samples to determine the stability of the creature's genetic makeup was grunt work, not something for department chairs.

Steiner set his knapsack down and removed a small toolbox. He gently applied a scraping tool to several exposed areas of the insect. He placed the tissue samples into baggies. "It's a latent mutation."

"What are y'all talking about?" Casey asked.

"If the bug—" Ruth began.

"Butterfly," Steiner corrected. "*Hesperiidae magnissima*."

Ruth knew her bugs, but had never heard that Latin phrase before. Steiner had undoubtedly just made it up to impress the grad students.

"Butterfly," Ruth continued. "The DNA spectrum analysis will determine if this is a latent mutation or a recent mutation like the ants that overran Los Alamos back in '91. A recent mutation would mean that somebody's breaking the law and messing around with radiation and DNA. A latent mutation would be a side effect from the atomic testing in the fifties and sixties."

"Correct." Steiner put the tissue kit back in the knapsack. "My students are going to set up a couple of traps in case some more butterflies appear. We'll remove the trapped bug when our truck gets here."

"You expect more butterflies?" Ruth asked.

Steiner reached into his vest and pulled out a bottle of water and took a sip. "Seasoned biologists have a feel for these things. You'll understand someday, Ruth."

Mom stood at the door to Ruth's old room. She wanted both of her children to stay as long as there might be monster bugs in the yard. "Can I get you anything, dear? Another blanket?"

Ruth just wanted to lie down for a few minutes after dinner. "I'm fine, Mom."

"I don't understand why you can't find a nice man and settle down."

Ruth wasn't sure what was more annoying—her mom's constant meddling in her dating life or the fact that Mom just didn't want to understand who she was. "Mom, you know I date girls."

"What about that nice boy who took you to prom?"

"Good Lord, Mom. That was almost twenty years ago. Stan Hubbard's been out of the closet for a long time."

Casey called out from the living room and rescued her. "Give it a rest, Mom. Ruth's doing just fine."

Mom showed a sad little smile. "I just want you to be happy, dear." She closed the door.

Ruth studied her childhood bookshelf. The problems of Nancy Drew seemed overwhelming before Ruth had to contend with a terminally ill dad and an alcoholic girlfriend. Of course, Nancy Drew had a father and friends who supported her career. Even the police took the teenager seriously as a crime solver.

A loud buzzing, like a chain saw, interrupted her musing. Something crashed against the house. Scooter howled from the yard.

Somebody knocked. Ruth prayed it wasn't Mom with more dating advice. "Come in."

Casey walked to the window. "There's another one of those bugs."

Ruth yawned. "Butterfly?"

"It's a dragonfly."

Ruth peered outside. The monster dragonfly, bigger than a S.U.V., hovered an arm's length away. Its jaws snapped at the air.

Scooter sat under the oak tree and barked.

"That thing eats plants, right?" Casey asked, pointing to the large jagged mandibles.

Ruth shook her head. "They're carnivores. The little ones eat mosquitoes and gnats and flies. I don't know what the big ones eat."

* * *

Ruth and Casey had no trouble convincing Mom to stay in the house. They stepped outside. Casey held Dad's old shotgun.

With a thunderous buzz, the dragonfly slammed into the front porch. Its wings jammed against the posts. It couldn't get any closer.

Casey fired the shotgun.

"Don't hurt it," Ruth said.

"Just trying to scare the sucker."

Startled by the noise, the creature flew off and focused on Scooter. In a strafing maneuver, the dragonfly dove down toward the dog. Scooter darted behind the tree. The dragonfly couldn't force its oversized wings through the tree's sprawling limbs.

"You got enough ammo to keep scaring it away?" Ruth asked.

Casey popped another shell into the gun. "Sure."

Ruth pointed to a net Steiner had set up by the oak tree. "I'm going to get the bug into that net."

Casey's eyes opened wide. "You sure you know what you're doing?"

"I'm a biologist. Let's go."

The dragonfly was preoccupied with Scooter. Ruth made it to the edge of the net in a couple of minutes. Casey stayed a dozen paces behind.

Ruth knew she should be terrified, but she just felt exhilaration. After unclear goals the last few years, outwitting a ravenous insect was straightforward.

"What now?" Casey asked.

Ruth pointed to the trap's switch. "One of us needs to pull the switch when that thing lands. I'll get that bug's attention."

She started screaming.

The dragonfly ignored her.

Ruth yelled louder. "Hey, stupid! Over here!"

"Maybe the bastard can't hear you," Casey said.

How had she forgotten something from high school biology? Casey was right. Dragonflies felt vibrations in the air. The shotgun burst had created enough of a ripple to startle the insect, but dragonflies didn't hear.

"Fire some shot close to it," Ruth said.

"I have a better idea." Casey whistled and Scooter looked at him. "It's a little hunting trick. I call it serpentine."

Scooter stared expectantly

"Get the duck!" Casey yelled. He threw a stick to the far side of the net and let out three quick whistles.

Scooter ran a crisscross pattern in front of the dragonfly.

Casey kept the shotgun aimed at the dragonfly as it dove toward Scooter.

It skimmed across the steel mesh and Ruth flipped the switch. The trap clamped shut. The dragonfly thrashed and bit at the cables. The net held firm.

Scooter rested at Casey's feet.

Casey scratched the dog's head. "Good boy." He turned to Ruth. "Sis, where'd that bug come from? Is it another latent mutation?"

"Nope. And neither is that butterfly."

"That professor said—"

"Steiner's lying." She looked toward the teaching forest. Broken saplings and torn shrubbery showed where something had punched its way out. "We need to check out the woods."

Casey pointed to the sun, which was dipping below the horizon. "If it's all the same to you, sis, I'd rather wait until daylight."

* * *

The next morning Ruth and Casey entered the forest.

Ruth stopped at one of the signs that described some unique forest feature. "Dad played this game with the signs. He wanted me to memorize them from our last hike. He used to tell me what a good biologist I'd be. Did he ever tell you that?" Ruth said.

Casey laughed. "The only game Mom and Dad ever played with me was pretending that I'd go to grad school like my older sister."

"Mom's favorite game is pretending that my girlfriend is a really good friend."

Casey sighed. "Yeah, she lives in her own world, doesn't she?" He kept a firm grip on the shotgun. "What are we looking for?"

"I'll know when I see it."

"What's that over there?" Casey asked.

A nondescript gray building nestled in low-lying branches and vines. A faded sign said MAINTENANCE.

A colorful red umbrella, like one beside a beach motel's pool, poked over the roof. They walked closer and Ruth realized it was a mutated flower, as tall as a tree.

Casey let out a low whistle. "Holy crap."

He jimmied the shed lock with his pocketknife while Ruth held the shotgun. Inside, grimy fertilizer bags and rusty tools sprawled on rotten shelves. The shed looked like it hadn't been touched in years except for shiny new lockers near another door.

Ruth opened the lockers. A heavy black gown hung inside. A stack of gloves and hoods rested on the top shelf atop a closed laptop.

"The clothes are lead. Somebody's monkeying around with radiation." Ruth rapped on the interior door. "Whatever we're looking for's in there."

"Allow me." Casey grabbed a flathead screwdriver off a work bench and fiddled with the deadbolt. After a couple of minutes, he pulled the door open.

Ruth handed a gown to her brother. "Put this on."

It was hard moving around in the lead clothing, and the hood's glass plate kept fogging up, but Ruth still recognized a lab when she saw one. She noticed metal counters, covered with neatly stacked folders.

The base of one wall was rotten. She could see daylight through a hole that was partially patched with duct tape. This lab hardly met the industry standard for a "clean room."

Against a wall were large glass domes. Peeking inside one, she saw what looked like a good-sized trout swimming in a foot of water.

It was a tadpole.

Ruth imagined somebody rummaging through the biology department's dumpster and cannibalizing discarded lab equipment. Rubber tubing connected X-ray tubes, old-style incubators and centrifuges. Bottles of colored liquid—probably mutagens—filled one shelf. A very expensive electron microscope stood out among the scavenged parts.

Then Ruth saw the Woolworth's home reactor. She had read about the now-defunct retail chain that had tried marketing atomic power in the seventies until Three Mile Island bankrupted them. "Those things are illegal."

Ruth slammed the lab door. She hurled her gloves onto the floor and let loose a stream of profanity.

Casey crossed his arms. "What the hell, sis?"

"That S.O.B. acts so high and mighty and he's breaking the law."

"Steiner?"

"Yeah." She didn't know what made her angrier—that Steiner wasn't playing by the rules, or that he was literally conducting experiments in Ruth's backyard and hadn't included her. If he had asked for her help, she wondered if she would have agreed.

"So, do something about it."

Ruth slowed down her breathing. She glared at Casey. "Like what? He's department head."

Casey shrugged. "Something besides complaining."

"The bastard turned me down for tenure."

Casey rolled his eyes. "Yeah, I know."

And, without thinking it through, Ruth pulled out her mobile phone and called Steiner.

Steiner arrived in half an hour. He wore jeans and a sweatshirt. His hair stuck straight up, like he had just awakened. He frowned at Ruth. "What are you doing here?"

Ruth stayed calm. "Professor Steiner, why do you have an atomic reactor?"

Steiner shrugged. "The ban on genetic radiation experimentation is pointless. Mutations aren't necessarily bad if they can be controlled. Evolution is mutation." He leaned against the wooden shelves. "Why'd you call me down here? Are you trying to strong-arm me into doing something? Do you want tenure that bad?"

"You should have given me tenure yesterday."

Steiner sighed. "Why? Because your dad used to run things?"

"I've earned it. Last time you told me I needed to write more journal articles. I've had eight published in three years and I still haven't done enough?"

"Ruth, lots of people get denied tenure. Some people never make it."

"Yeah, well maybe the guy running things shouldn't be breaking the law. Maybe I should call the cops right now."

"Ruth, that's not going to help things." He closed his eyes for a second. "Maybe you do have to prove yourself more, because of your dad. Maybe some folks resent you."

Casey put his hand on his sister's shoulder. "Sis, you need to calm down. He's got a point. Daddy did get you your first job down at State."

"That was a long time ago," Ruth said.

Casey turned to Steiner. "And, it wouldn't hurt if you got along with folks better. You sure didn't make any friends yesterday around this place. You didn't even talk to my mom before you started tearing things up."

"You're right. I was pretty rude," Steiner said. "But you two are looking at my DNA project all wrong. I've filled out the forms with the EPA. This project will be approved."

Ruth laughed. "That almost never happens."

Steiner glared at her. "I think I can walk my way through a government form."

"Nobel laureates can't get approval half the time."

Steiner snorted. "I suppose you could do better?"

"Maybe I could." Ruth sketched an idea she was contemplating for her next journal article. She handed the sketch to Steiner.

Steiner glanced at the diagram. "What is this?"

"It's a dual virus approach for genetic manipulation. One virus mutates an isolated strand of DNA. The other virus protects the remaining strands from radiation. With better radiation shielding and these two viruses, I think the EPA might give you a waiver."

Steiner smirked and studied her drawing. His smirk vanished. After a minute he said, "And this one on the left, the alpha virus, I'll call it—"

"Attacks a specific strand of DNA."

"And the beta virus?"

"Protects the remaining strands. No more surprises."

Steiner sat down on a chair. "Ingenious."

Ruth squeezed Angela's hand. This was their first trip to Mom's. She and Angela had dated for three months after meeting at the southern university symposium in Greensboro. "Honey, you need to understand a couple of things. My mother's place is a little unusual."

Angela drummed her fingers to the reggae music on the radio. "I have a mother too."

Ruth pointed at the woods. "The project's in there. Steiner and I have to get the place shipshape for another EPA inspection on Monday."

Angela frowned. "I guess that means you'll be home late."

"Yeah, but on the bright side, Steiner says things are looking real good for tenure at the next review." She turned down the driveway. "Mom has a bit of a butterfly problem."

Angela looked puzzled. "So?"

Ruth parked the car. "Take a look."

Casey stood beside a recently felled loblolly pine. A monster butterfly hovered nearby. Casey flashed a flashlight at the bug and it landed beside the tree.

"He's trained the bugs," Ruth said.

Casey looped a rope around the butterfly. The creature turned its head as if expecting something. Casey fed it a long piece of pokeweed. When the bug finished its treat, Casey aimed the flashlight at the butterfly's eyes and clicked it off and on several times. He whistled twice and Scooter barked and ran circles around the bug.

The butterfly rose into the air, like a helicopter. Scooter ran off to a far corner of the yard. Carrying the tree, the butterfly followed.

"His landscaping business has really picked up," Ruth said. "He has four butterflies and a dragonfly working for him."

"Sweet lord," Angela gasped.

Ruth turned off the engine. "But listen, it's really going to get weirder."

"How could it possibly get stranger?" Angela asked.

Ruth stroked Angela's long blond hair. "If Mom gets you alone, she'll ask if you have a brother I can date." ○

Sarah Pinsker recently won the Theodore Sturgeon Memorial Award for best short story and her new album is finally close to done. “There are just a few tracks here and there, left to complete, which means nights in the studio with a drummer or a backup singer or a fiddle player, playing the same parts over and over and trying new ones, until my head is stuffed with those parts: random snippets of bass line or harmony vocal that get caught in a loop. Sometimes they spill out.” This helps her to sympathize with Aisha, and her attempt to compose . . .

SONGS IN THE KEY OF YOU

Sarah Pinsker

Aisha hummed her own soundtrack as she walked into the cafeteria. She had composed the melody herself, an upbeat piece with a hint of swagger. She grabbed a tray from the stack and got in line. Chili day. Her favorite. She kept humming all the way to the cashier, where she used her last credits for the week.

“Do you hear something?” asked a voice behind her.

Aisha turned around, though she already knew who was there. She had heard their soundtracks, recorded to play in perfect harmony whenever they wanted to announce their arrival. It was a gorgeous piece of music, taken as one: three intertwined melodies composed and recorded professionally just for them. All three songs were pretty enough on their own, but the harmonies they created when the Trio walked into a room were stunning. She had only heard two parts this time, Dee’s brassy melody and Janissa’s funky counterpoint. Bryn wasn’t with them, so the high part was missing, but it still held together fine. Aisha only dreamed of making music like that.

“Girl thinks she can fool us into thinking she’s got a Kurzwailer.” That was Dee. The others never spoke until she did. If they were a real musical trio, she’d be the lead vocalist.

“She’s faking it. No bracelet.” That was Janissa.

“I’m not faking anything,” Aisha said, though she knew she should keep quiet. “I was humming.”

They all knew it was a lie, or a part lie. She wasn’t pretending to have a Kurzwailer on her wrist, but she was obviously singing her own theme song, or what would be it if she could afford the bracelet and the recording.

Aisha turned to walk away, but as she did, somebody’s foot shifted to trip her. The chili capsized, hitting the floor and splashing her jeans on the way down. She stared at the bowl and the streaks on her legs, trying to ignore the laughter. She didn’t have enough to cover a second bowl. She’d have to go without lunch.

"She's clumsy, too," said Dee. For a moment Aisha had thought maybe it was an accident, but now she doubted it.

The two of them pushed past Aisha, making a show of stepping around the spill. She heard their song playing as they made their way to their table. Most kids had the type with built-in speakers, but the Trio all had the most expensive model Kurzweil, the one that could override broadcast over any nearby sound system. The ancient cafeteria PA crackled on the low end.

Aisha's stomach grumbled. She walked to her locker to see if she had anything in there to call a snack. She knew she didn't have any other clothes, since it wasn't a gym day.

"Hungry?"

She closed the locker door to find Bryn standing on the other side, holding out a protein bar. Bryn was a boy today, like he was more and more. He somehow made a sweater vest and bow tie look fashionable. All those years running the school with the other two parts of the trio had paid off in residual cool points.

"It's all I've got unless you come back to the cafeteria. I can buy you more chili if you want, but I'm guessing you don't want to go back in there right now."

Aisha shook her head. "I don't need charity."

"I know, but you're probably hungry. Just take this."

Aisha wished she had the pride to refuse, but she was hungry. Hungry and suspicious.

"Why are you being nice to me?"

"I saw what they did. You didn't deserve that. Making fun of someone for a bad song is one thing, but she shouldn't have tripped you."

"My song wasn't bad."

"What?" Bryn looked surprised. "Why does it matter?"

"Because it does. I know I can't afford one of those stupid bracelets, but I'm a good songwriter. I know I am. Y'all make fun of me, but your parents pay people for your silly entrance music. They pay people like me. So how come I'm the one who gets laughed at?"

She folded her arms and scowled at him, trying to will her stomach not to growl loud enough to be heard. She didn't really think the bracelets were stupid. Who didn't want their own theme song to play at the push of a button?

Bryn stared for a moment, then smiled. "Yeah, you're right. It did sound pretty good. Truce?"

He held out the protein bar again, and this time she took it.

"Thanks," she said. Not truce. She didn't trust that. She felt a little bad, but people didn't just go from being mean to being nice. Not that easily. She closed her locker and headed for her next class. She didn't feel much like singing.

That night, somebody posted a picture online of her with chili on her legs. "Accident in the cafeteria," read the caption. Aisha tried not to cry. She'd been teased before. She could handle it. She wouldn't look to see how many times the picture got shared around. Better not to know.

She spent the weekend helping her mother clean offices. She normally didn't mind working with her mother. The office building was quiet and empty, and had great acoustics in its stairwells and bathrooms.

"Sing for me, Aisha," her mother usually said. After Aisha sang, her mother would shake her head and say, "They should never have defunded the school music programs. Someday I'll get you lessons and instruments and everything you deserve."

"It's okay, Mama," Aisha would say. She believed it sometimes. One of the best days of her life was the day her mother brought home a ukulele somebody had put in the trash.

This time, she cleaned separately to avoid having to talk or sing.

On Monday morning, Aisha walked into homeroom behind the bell. When she timed it well, she walked in with a crowd, and nobody noticed she didn't have a Kurz bracelet amid the cacophony of others' entry music. She thought she heard somebody call her "Chili," but she ignored it.

Her homeroom teacher came in with her own music, some bad guy's theme song from a sci-fi movie, and everybody shut up. Ms. Wallace tried really hard to be cool, but it never quite worked. Of course, if she were a student, she'd still be cooler than Aisha for having a Kurz at all, even if she used some tired old movie music instead of paying for something personalized. It was effective, in any case. Everybody shut theirs off once they were in the room, so their bracelets didn't get confiscated. Aisha was the only one not reaching for a button at her wrist. She put her head on her arms and waited for Ms. Wallace to take attendance.

Heading to second period, she saw Bryn at the stairwell. She fumbled for the two dollars she wanted to give him so she didn't owe him for the protein bar. As she walked toward him, she realized he was talking with Dee. She changed directions again immediately, but not before she saw the don't-bother-me looks on their faces. Like she hadn't known better than to approach them. She stuffed the money back in her pocket.

That afternoon she found a note wedged into her locker door's grating. She was almost afraid to open it, but she decided it was better to know.

"This is a hack for your tablet. It overrides the school software lock so you can record on it. There are some good free recording apps once you're unlocked."

She didn't recognize the handwriting, so she stuffed the note in her bag and tried to ignore it. She didn't try the hack that night, or the next. She kept imagining what might go wrong. What if someone was trying to corrupt her tablet? The school paid for the first one, but they charged if you needed a replacement, and her family couldn't afford that. Or what if she did it, and it turned out to be some malicious code that spewed her private stuff all over the web?

But still—a recording app would be cooler than anything. All she had at home was an old four-track recorder she had found at a junk shop. She had taught herself how to record with it, but it was so ancient it took cassette tapes, so even if she managed to find a used Kurzweiler, she had no way to upload her music. She was pretty sure she was the only analog person in the entire school. Possibly the city. Possibly the world.

The thought of a real digital recording app kept nagging at her, until finally all the things that could go wrong didn't seem as bad as going another moment without it. She read the note over and over again while she waited for the bus on Wednesday afternoon. By the time she got home, she had made up her mind. She put her "SSH . . . RECORDING" sign on the door and barricaded herself inside the closet she shared with her little sister. She made sure the tablet was offline, then followed the note's instructions.

It worked. The note let her behind the school interface that normally blocked out any use except homework and a few approved research sites. Nothing seemed to be going wrong, so she risked a quick visit online to download a free Kurz recorder app. She spent the evening recording her own theme song, singing all the parts herself. It was only a thirty-second piece, but she liked the way it sounded with layers. Not that she had a Kurz, but still cool.

She was careful not to let her teachers see she had hacked the tablet when they came by to look at her work, but she had to force herself not to fiddle with the recording app during class.

A video from the chili incident went up that night. It was only a few seconds long, but somebody had dubbed some squeaky off-key song over it, with the caption "Chili thinks she can sing." This time, she looked at the tags to see who had put it up: Janissa. What had Aisha ever done to her? She stared at the picture, and the dozens of comments.

"What's the matter?" her mother asked her at dinner. "You weren't singing while you set the table."

"I don't feel like it."

"That's why I asked the question. You never don't feel like it."

Her sister Maya giggled, but stopped when she saw the look on Aisha's face. Aisha struggled not to cry. Her mother had enough to worry about. "It's nothing, Mama. Just a tough day at school."

Her mother let her drop the subject and talk about her biology test instead. At least something had gone right.

Even though Maya went to bed an hour before Aisha, she was still up when Aisha came in the room. "Is it that Kurzwailer thing? Is that why you're sad? Because you don't have one? A lot of kids at my school have them now, too."

Aisha sat on the bed's edge and waited a second for her eyes to adjust to the darkness. "Nah. I mean, I still want one, but that's not why I'm sad. Well, it kind of is."

She struggled to explain. "You know the way they bust out with music when you press the button? That's how I feel all the time. Like I'm busting out with music. And they all have it, and they don't even care. They want them to fit in. I want one because the soundtrack in my head is bigger than my head can hold."

"Is that why it leaks out your mouth all the time?"

Aisha poked Maya. "Very funny." It was. Funny and true.

She had planned on going to bed, but now she climbed over her sister's clothes piled in front of the closet and shut the door behind her. She turned on her tablet and navigated back to the video.

In the comments section she wrote, "Chili knows she can sing. Chili Beats charges reasonable rates for your own personalized Kurzwailer songs."

She hit send before she changed her mind.

She didn't have the nerve to look at the video again in the morning. She didn't want to know if people were making fun of her even more now. When she walked into homeroom with the just-before-the-bell noise, she didn't hear anybody laughing at her.

Bryn caught her on her way out of biology. "So I guess you liked that hack?"

"That was you?"

"Yeah." He grinned. "I'm good at code stuff."

"But why?"

Bryn shrugged. "I guess I'm sick of them treating people like garbage for no reason."

"Them?" Aisha put her hands on her hips.

"Us, I guess. You're right. My fault, too." He paused. "But I swear, I'm done with it. I've been wanting to go solo. The three-part thing doesn't suit me anymore."

"But that song is perfect. Everybody knows it's you when y'all walk into a room."

Bryn fiddled with his bracelet. "It doesn't sound like me. It sounds like who I used to be. Or who I was trying to be. Anyway, I want a different song. Something made only for me. I don't want to be part of somebody else's melody. It's so high and pretty and it just sounds wrong."

"So get a new one."

"Yeah—only—I can't afford to have a pro write me a new theme and get it recorded. Dee's parents paid for everything for the old song."

"Oh. Plenty of people buy tunes, though."

"Yeah, but I don't want to be made fun of for a bad song. Or a boring one, even."

Aisha waited for a punch line. Bryn spoke again. "Um, would you be willing to write me something? Something just for me?"

"For real?" Aisha's heart beat faster, but she told it to calm down. "You're not setting me up just to make fun of me?"

"For real."

He looked sincere, but something still bothered her. "But . . . you said you can't afford a new song. You haven't been nice to me for years. Why should I do it?"

Bryn crossed his arms across his chest. "I don't know. I thought—"

"You thought I was so desperate for y'all to be nice to me that I'd give you something because you smiled at me?"

"I didn't just smile! I gave you that hack. And I stood up for you in the comments on Janissa's video. I even recommended 'Chili Beats' for anybody looking for a new tune."

That shut Aisha up for a second. She hadn't gone back to look, so it might even be true.

Bryn continued. "I can tell a few of my friends, too. Maybe we could work something out on commission? If I bring you ten customers, you help me with mine for free?"

"Fifteen."

He grinned. "Fifteen, then. Maybe if you make enough writing songs, you can buy yourself a Kurz someday. If you want."

"Maybe," Aisha said. "If I still want it."

Bryn held out his hand, and Aisha shook it. Then she turned her back on him and walked away.

Fifteen customers. Fifteen songs. She was going to be a professional musician. She could buy real instruments, and help her mother with bills. Maybe every fifteen customers she'd even throw in a freebie for somebody who couldn't afford one. She'd give Ms. Wallace something to shut up the class for real. No threats of confiscation, just a seriously badass tune. The best part was she wouldn't ever have to be mean to Dee or Janissa to show them up; she'd wait until they came begging her for a new Bryn-less duet. She pictured the whole school walking around with her Chili Beats. It could happen. Maybe.

For the first time in a year, she didn't care if she never got a Kurzwailer. She hummed her own soundtrack as she walked to her next class, making sure everybody heard it. ○

Incandescently light and pocked
with holes

(indeed, it seems to float
on air),

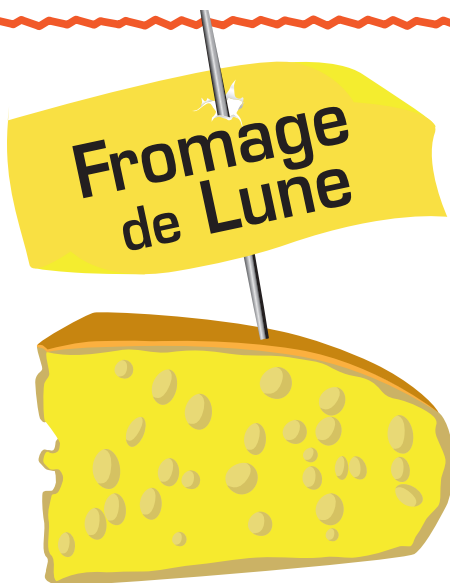
this ethereal cheese will make
you gasp for breath,

but peeled of its gibbous
rind,

soon only a quarter wedge
is left

for a midnight snack.

—Robert Borski



Allen M. Steele's most recent news includes a new collection, *Tales of Time and Space*, which will be published in April by Fantastic Books. Allen's latest tale is the penultimate story in a new series that began with "The Legion of Tomorrow" (July 2014) and "The Prodigal Son" (October/November 2014). Readers can rest assured that the final tale will be appearing soon, but in the meantime, you'll have to settle in for . . .

THE LONG WAIT

Allen M. Steele

i

My name is Dhanishta Arkwright Skinner, and this is the story of my life. But to tell it correctly, I must begin not in the place where I was born, but a long way from there.

On the day of my birth—February 7, 2070—humankind's first starship, the *Galactique*, was beyond the farthest reaches of the Solar System, riding a microwave beam projected from a satellite in Lagrange-point orbit near Earth. From the perspective of an outside observer—that far from Earth, there were none—the starship would have appeared to be an enormous disk, sixty-two miles in diameter but only a few fractions of an inch thick, slightly concave in shape and vaguely resembling a parachute. The carbon-mesh beamsail slowly spun clockwise on its axis, and dragged along behind it, by threadlike nanotube cables, was the vessel itself—a cylindrical collection of modules 320 feet long, with various antennae protruding from its hull, and the bell-shaped fuselage of a landing craft flaring at its stern.

This hypothetical observer would have caught only the briefest glimpse of *Galactique* as it flashed by. Although the ship began its journey at the stately rate of 1.9 meters per second, over the course of weeks and months it gradually gained velocity while Earth shrank to a tiny blue star, and even Jupiter and Saturn became little more than small bright orbs. By the time *Galactique* passed through the orbit of Neptune and entered the Kuiper Belt, it was traveling at nearly a quarter of the speed of light and still accelerating.

Within the ship, all was dark, cold, and quiet. I wasn't aboard. In fact, *Galactique* carried no living crew. Its passengers—some of whom were destined to become my descendants—were sperm and egg specimens sealed within a cryogenic crèche, circular rows of stainless steel tubes that looked like silver pens covered with a thin skein of frost. The only open space was a central passageway running

down the length of the vessel, and even if I had been there, the shaft would have been barely large enough for me; it was there solely to provide access for the spider-like robots that occasionally emerged from their cubicles to perform the routine inspection and maintenance tasks delegated by *Galactique's* quantum-computer artificial intelligence.

The AI was a purely logical machine-mind. It possessed no soul and dreamed no dreams. Its thoughts—if they could be called that—were little more than digital processes of an unliving thing. It had great patience, though, because it was programmed to regard time itself as nothing but an abstraction, and it understood the language of its creators only when their words were translated to its own coded input. It maintained a log of its journey that was periodically pulsed to a receiving station on the far side of the Moon via the barrel-shaped lasers on the ship's outer hull, but it wrote no poems, sang no sea chanteys. Although I often fantasized what it might be like to be a passenger, I'm glad I wasn't; *Galactique's* guiding mind would have been lousy company.

So there was no one aboard *Galactique* who would have appreciated the fact that, on the very same day it achieved the cruise speed of half the speed of light, 0.6 light years and 920 days from Earth, I was born.

ii

Let me tell you about my home.

The Juniper Ridge Observatory rests atop a mountain in the Berkshires, just outside the small town of Crofton, Massachusetts. Built in 1926, it was a relic of astronomy's golden age, when the planets and stars were studied through optical telescopes in remote locations. Juniper Ridge was a planetary observatory established by Massachusetts State College—later the University of Massachusetts—and for nearly a century students had traveled to it from the Amherst campus, where they assisted professional astronomers in such tasks as confirming Clyde Tombaugh's discovery of Pluto and continuing Percival Lowell's observations of Mars.

By the end of the century, though, Pluto had been reclassified as a Kuiper Belt object, American and Russian probes had discovered Mars to be nothing like Lowell imagined, and large instruments like Juniper Ridge's thirty-inch Cassegrain reflector had been made largely obsolete, first by radioastronomy and later by orbital telescopes. When UMass and four other Western Massachusetts schools built the Five College Radio Astronomical Observatory near the Quabbin Reservoir, Juniper Ridge's usefulness for scientific research came to an end. The observatory remained open for a few more years as a place to teach undergraduate physics students and a location for star parties, but in 2012 the university closed Juniper Ridge for good. The telescope was dismantled and sold to the Boston Museum of Science, and the aperture of its concrete dome was sealed.

The observatory and its adjacent buildings went up for sale, and might have been eventually sold to a real estate developer and torn down to make room for a resort had it not been for the Arkwright Foundation. The *Galactique* Project was in its early planning stages by then, and the foundation knew that it would need a permanent location for their operations after *Galactique's* components were launched on the Caribbean island of Ile Sombre and assembled in Earth orbit. A closed-down observatory would be an ideal site, and the fact that Juniper Ridge wasn't far from the former home of the foundation's benefactor and namesake appealed to the board of directors. So the foundation purchased the property and

renovated it as the new Mission Control Center, and in August 2067 the *Galactique* Project moved in.

My birth was overshadowed by all the activity in Mission Control, located on the ground floor of the former observatory dome. At that point, it would be nearly seven months before the lunar tracking station received the laser telemetry from the distant starship and relayed it to Juniper Ridge, so the control team had to go by faith and previous reports that *Galactique* was still on course and had achieved its cruise speed of .5c. Nonetheless, they cheered when the Mission Director—my grandfather, Benjamin Skinner—issued the order for the beamsat to be shut down. The ship's two-and-half year boost phase was over; the vessel was now on its own.

While this was going on, a young midwife who lived in Crofton was handing a newborn infant (me) to the woman lying in an upstairs bedroom of the adjacent house (my mother). Despite my father's reservations, Chandraleska Sanyal Skinner had insisted upon giving birth at home and not in a hospital. She'd spent too much time in Bay State in recent years, undergoing long-term therapy for the head injury she'd sustained on Ile Sombre in the weeks just prior to *Galactique's* launch—a truck bomb had gone off near the launch site, a story that I won't repeat here—and the less she saw of the place, the better. My father—Matthew Arkwright Skinner, another member of the control team—had gone along with my mother's wishes only reluctantly, and not until after my grandmother found a local midwife. Dad had become accustomed to Mom's mood swings; if it was less stressful for her to have the child in the house they shared with his parents, that would be better for everyone.

My father took a few minutes to cradle me in his arms and agree with my mother that my name would be Dhanishta—eventually shortened to Dhani, just as Mom abbreviated hers as Chandi—and that, like him, my middle name would be in honor of my great-great-grandfather, the author Nathan Arkwright. Then he surrendered me to Mom and went back to the observatory to tell my grandparents the other great news of the day.

And then he got in his car, drove down the mountain into town, walked into Crofton's one and only bar—a country roadhouse called the Kick Inn, which I'd grow up hoping would burn to the ground—and celebrated this momentous day by getting ploughed. My family didn't see him again until late that evening, when his car brought him home after someone deposited him in it and set the autoreturn.

Sadly, this was something I'd come to expect from my dad.

By the time I was old enough to realize that he had a drinking problem, I'd become Juniper Ridge's child-in-residence. Seven people lived there: my parents, Matt and Chandi, and grandparents, Ben and Jill—who shared the two-story New England saltbox that had once housed the staff astronomers and visiting scholars—and Winston and Martha Crosby, a young couple who occupied a smaller cottage that once belonged to the observatory's maintenance staff. The Crosbys were childless, making me the only kid among a half-dozen grown-ups. So while I had no siblings or immediate playmates, I didn't lack for adult supervision . . . which was fortunate, because my parents, while loving, had troubles of their own.

I once had a great-grandmother as well, but I have no memory of her. Kate Morressy Skinner, the family matriarch, lived long enough to make one last trip from Boston to Crofton so she could hold her newborn great-granddaughter in her arms. Then she went home and, a couple of months later, quietly passed away in her sleep. When I got older, I learned that Grandma Kate was the person responsible for her family coming to live on Juniper Ridge. As the last surviving member of the Arkwright Foundation's original board of directors, she'd approved the purchase of the observatory, then delegated the task of monitoring *Galactique's* voyage to my parents and grandparents.

From the start, I was a lonesome child. My mother, whose behavior was already erratic when she and Dad got married and moved to the observatory, became even more reclusive after I was born. The truck bomb had been set off by a member of something called the New American Congregation, and although they were no more—the Arkwright Foundation had sued them into bankruptcy—she continued to believe that an unknown disciple would try to find us and finish the job. Paranoia was a legacy of her head trauma. The nearest public school was in another town twelve miles away, meaning she'd have to travel there by car or bus every day, a commute that would take her from the familiar safety of the mountaintop retreat and into a world of strangers whom she increasingly distrusted. Once I finished preschool, she decided to home-school me. Although Grandpa and Grandma argued against this, Dad didn't mind; he'd disliked making the twenty-four-mile round trip to my kindergarten five days a week, and figured that Mom's new role as their child's teacher might help stabilize her precarious mental state. And since Uncle Win and Aunt Martha were willing to pitch in, Mom wouldn't have to do it by herself . . . which was also just as well, because Dad was often too hung-over to keep up his end of the bargain.

So after age six, I saw children my own age only occasionally. A set of twin girls lived on a horse farm three miles down the road from the observatory, and a boy lived with his father in a trailer a mile further on, but the sisters were a little younger and the boy a couple of years older, and at that time of life even a year difference in age can seem like an impassable gulf.

And it wasn't just this. In the constant company of six intelligent and highly educated adults, three of whom took turns every day as my teachers, I grew up in an intellectual environment. I was reading at a middle-school level before I was ten, and by the time I was in my teens I was fluent in French, Spanish, and Hindi, adept in higher forms of algebra and physics, knowledgeable of American and world history, and had read most of the classics of Shakespeare, Poe, Hemingway, Marquez, Clarke, Swanwick, and Le Guin. I was a brainy little girl, but precocious children often don't have a lot in common with kids their own age, and that made me even more lonesome.

I also knew something most kids didn't know: the details of humankind's first starship, now bound for Eos—or, if you want to get technical, Gliese 667C-e, a terrestrial planet in close orbit around an M-class red dwarf twenty-two light-years from Earth. Every day, my family and the Crosbys took turns standing watch in the observatory, which we called the MC. Inside the dome, a ring-shaped array of computers, control consoles, and holoscreens had been installed on the ground floor, while on the newly renovated second floor, a twenty-foot radio dish antenna had taken the place of the old telescope. Once the dome's aperture slot was open, the dish was able to slowly rotate on its pedestal, tracking a network of communications satellites across the sky. The comsats relayed information sent to them from another pair of satellites in orbit above the Moon, which in turn transmitted data gathered by the laser receiving station on the lunar farside.

This data was the voice of *Galactique*. The ship was already three and a half light-years from Earth the day my father took me in his lap and, in a moment of sobriety that was becoming increasingly scarce, patiently explained what he and Mom and Grandpa and Grandma and Uncle Win and Aunt Martha did for a living: they were listening for reports sent from a vessel on a long, long journey to a distant star, waiting for the day many years in the future—sometime in July 2135, in fact—when we would finally learn that it had safely arrived.

"See, everything the ship tells us about what it's doing comes to us here." Dad shifted me from one knee to another as he pointed to the holoscreen floating before

us. "All those numbers are codes, and the codes let us know that the ship is doing just fine."

"Uh-huh." I gnawed the knuckle of my left thumb as I gazed at the glowing columns of letters and digits. "I don't know what they mean." I was pretty smart for a seven-year-old, but not *that* smart.

"Don't do that." Dad gently pried my thumb from my mouth. "It'll make your teeth crooked. Sure, you don't know what they mean, because they're in code . . . short for what the ship wants to tell us. But since *we* know what the codes stand for, we can figure all it out, and if they tell us something's going wrong, we can tell the ship how to correct itself and make things right."

"Although it takes a while," Grandpa added. My grandfather was seated in a chair on the other side of the ring, studying another display as he listened to us. "We can't tell at once what *Galactique* is telling us because it's so far away, and *Galactique* won't know what we're telling it for the same reason."

"I don't understand." I fidgeted in my father's lap, but nonetheless I was fascinated. I tended to chew my thumb when I was trying to figure something out. "Why does it take so long?"

"How fast does light travel? Do you remember?"

"Umm—" I sought to remember what Uncle Win had taught me just last week —"186,000 miles per second."

"That's right! Good girl! And that's also how far the laser beam carrying data from *Galactique* travels in one second. It can't travel any faster because a laser is just a concentrated form of light, and . . . ?" He waited for an answer.

"Nothing moves faster than light!" I was proud of myself for knowing what Dad meant. "Nothing! Nothing at all!"

"Okay, so let's figure it out. How many seconds are in a year?"

"Ummmm . . ." I started to raise my knuckle to my mouth, and he pulled it away again. "A lot?"

"That's as good an answer as any. A lot. And if you multiply all those seconds by 186,000, and then take that number and multiply it by . . ." Dad paused to run his forefinger down the display, pulling up the figure for *Galactique's* current distance from Earth ". . . 3.523 lights, or light-years. That's how far away the ship is from us. Which means that it now takes three and a half years for us to hear anything *Galactique* has to say to us, and another three and a half years for it to hear anything we'd have to say to it today."

I stared at the holo. "Three and half *years*?"

"Uh-huh. And getting longer all the time."

I remember that day well, for in that instant, I had an epiphany seldom experienced by little girls, and sometimes never fully realized by quite a few adults: a sense of the vastness of space and time, the sheer enormity of the cosmos. Not only was the distance between the stars greater than I thought it was, but the implication that the Universe itself was unimaginably huge was a revelation both awesome and frightening.

Suddenly, I'd become a tiny and inconsequential little thing. The bottom had dropped out from under me, and I was an insignificant particle of a far greater whole.

I shivered. The hollow concrete eggshell of the MC had become a cold and forbidding place. I had an urge to scramble out of my father's lap and run from the building, never to return again. But Dad put his arms around me and pulled me closer, and then he whispered something in my ear that I'd never forget.

"Do you want to know a secret?"

I looked at him. "What?"

Dad glanced over his shoulder to make sure that Grandpa wasn't listening in. Satisfied that he wasn't, he went on. "There's a little boy aboard *Galactique*."

"Really?" I was astonished.

"Shh!" Dad raised a finger to his lips. "Yes, there is. He's asleep just now, and won't wake up until *Galactique* reaches Eos, but . . . yes, he's there. And it's our job to make sure he gets safely to the place where he's going. Understand?"

"Uh-huh." I thought about this a moment. "Dad . . . what's his name?"

My father hesitated, then he gave me an answer: "Sanjay."

iii

Later in life, I'd often wonder why my father told me that this imaginary child was a boy and why he picked the name Sanjay. Perhaps it was only a spur of the moment decision, the sort of embellishment a father would add to a fairy tale. Yet it's also possible that he might have been revealing a subconscious regret. Maybe he'd wanted a boy instead of a girl, and he would have named this boy Sanjay if things had been different.

Yet this didn't occur to me at the time. The revelation that there was a little boy asleep on *Galactique* provoked a different kind of wonder. As I lay in bed that night, the lights turned off and the blankets pulled up against the winter cold, I didn't sleep but instead gazed up at the ceiling, thinking about Sanjay. Dad told me very little about him, but it didn't matter; my imagination supplied the details, and before long he became as real to me as any living person.

Sanjay was my age, naturally, and like me, he also had the dark skin and straight black hair of someone with an Indian-American heritage. He slept in what my father called "suspended animation" because that was the only way he'd be able to survive the half-century-long voyage to Eos, but I figured that, every now and then, he'd wake up, knuckle the crust from his eyes, then rise from his little bed and wander through the ship, just to see what was going on. In my mind's eye, *Galactique* was very different from what it actually was; it was the kind of spaceship I was familiar with from the old science fiction movies I sometimes watched with Uncle Win, who had a fondness for these things. Sanjay would gaze through portholes at the passing stars, have a cup of hot chocolate and a cookie, check the instruments to make sure the ship was still on course, and then he'd get sleepy and return to bed again.

No one knew about Sanjay except my father. The little boy was a shared secret that we tacitly agreed to keep from my mother, grandparents, and the Crosbys. And since I'd found that there was little I could talk about with the few other children I knew—the two girls, Joni and Sara Ogilvy, were only interested in their dolls and the pony they wouldn't let me ride, and I tried to avoid seeing the boy, Teddy Romero, who was scary and a little mean—I didn't reveal his existence to them. Which was just as well. Sanjay was as lonely as I was, which made me feel a certain kinship toward him. He was the little brother I didn't have, the playmate I'd been denied. He became a friend I'd never actually met yet with whom I carried on many conversations, always when I was certain no one else was around.

As imaginary friends go, Sanjay was wonderful. Nonetheless, I was aware of the fact that my little chats were rather one-sided and that he wasn't really talking to me. I also knew that, even if he did occasionally wake from his long slumber, anything that he might actually want to say to me wouldn't be heard for years. Still, I wanted very much to speak to him. I considered the problem for quite a while, then one day I approached my father with my solution.

"I want to send a message to Sanjay," I said.

It was an afternoon in late spring. The winter snows had melted and there were new leaves on the trees. My father was behind the observatory, standing on a stepladder to clean the solar panels that, along with a small wind turbine on a nearby hilltop, supplied Juniper Ridge with its electricity. His eyes were puffy—he'd slept on the living room couch again, having come home from the Kick Inn late the night before—but he managed a smile as he climbed down the ladder to patiently listen while I explained what I wanted.

"You know it'll take a long time for it to get there," he said when I was done.

"Yeah, I know. But he can hear it when he . . ." I stopped myself. Dad didn't know that Sanjay wasn't always asleep. "Whenever he wakes up," I finished.

My father nodded, but didn't say anything as he wiped his hands on the cloth he'd been using to clear the spring pollen from the photovoltaic cells. "It's very expensive to send a signal to *Galactique*," he said at last. "If I let you do this, it can only be one time. And you'll have to make it very short . . . no more than a minute. Understand?"

A minute seemed much too short for everything I wanted to say to my friend, but . . . "All right. Just a minute. Please, Dad . . ."

"Okay, then. We have to send some course data next Wednesday anyway. Write down what you want to say and show it to me first, and if I think it's short enough, I'll let you record it and we'll attach it to the next pulse." He paused. "But don't let anyone else know you're doing this, okay? Sanjay is still our little secret."

I grinned and happily nodded, and over the next week I wrote a short script for what I wanted to say. Knowing that I had only sixty seconds, I rewrote it again and again, pruning unnecessary words and revising my thoughts, then carefully rehearsed it while keeping an eye on the clock to make sure that I didn't exceed the time limit. The following Tuesday, I showed the handwritten script to my father while he was standing watch in the MC. He liked what I had to say, but made me read it aloud while he timed me. Satisfied, he told me to come back the next night, which was when he was scheduled to send the transmission.

The scheme almost fell through at the last minute. After dinner, I walked over to the dome at the appointed hour, only to discover that Dad and I weren't alone. Uncle Win was there, too . . . and while he and I got along just fine, when it came to *Galactique* he tended to be rather humorless, often saying that keeping track of the ship was "a sacred trust." He wouldn't understand the notion of sending a nonessential video to the ship.

Dad caught my eye when I came in and silently placed a finger to his lips. I kept the message in my pocket and remained quiet while he and Uncle Win checked and rechecked the coded material they were preparing to transmit. Then Dad drained the last of the coffee in his mug, idly wished aloud that he had more, and asked Winston if he'd mind going back to the house and brewing another pot. Uncle Win was a coffee bug, and everyone was in favor of doing whatever it took to keep Dad away from the Kick Inn, so Win was only too happy to comply.

As soon as he was gone, my father hustled me to a chair in front of the console where the videocam was located. He fitted me with a headset and did a brief mike check, then stepped out of range of the lens. "We're all set," he said, then pointed to the keyboard. "Whenever you're ready, just push the Return key and start talking."

"Okay." I spread the wrinkled notebook pages out on the console.

"You've only got one shot at this. Make it count."

"Okay. I will." I took a deep breath, and nervously fussed with my appearance. I was wearing my nicest blouse and skirt, and even put a little yellow silk flower in my hair. Then I touched the key and looked straight at the lens.

"Hello, Sanjay," I began. "My name is Dhanishta Arkwright Skinner, and I'm calling you from Earth . . ."

Sanjay wasn't real, but thinking about him so much accustomed me to imagining *Galactique* in vivid terms. So it's easy for me to visualize what was happening there, like so:

A little more than three and a half years later, my message was received by the ship, along with a related set of instructions my father hadn't told me about. Since they were prefixed as a nonessential communiqué not to be opened until after the ship reached Gliese 667C-e, the AI stored them in memory, then proceeded to the more important material.

Galactique's course was taking it in the general direction of the galactic center, just below the plane of ecliptic. By then, the ship's point of origin was no longer visible; Earth's sun, along with its family of planets and neighboring stars, had vanished into a conical zone of darkness that had appeared behind the ship. The same Doppler effect caused by the ship's relativistic velocity—a little more than 93 million miles per second—caused the stars around and in front of *Galactique* to red-shift, changing hues slightly as they seemingly migrated in the direction of travel, while at the same time causing infrared and ultraviolet sources to enter the visible spectrum as seemingly new stars.

If there had been any living passengers aboard, they would have been confused by the display. *Galactique's* AI, along with the array of lesser computers it managed, was prepared for these phenomena. The navigation subroutine ignored the visual distortions and instead took its bearings from galactic coordinates, taking into account the parallax motions of the nearby stars. There was little chance that the ship would get lost on its way to Eos, but just to make sure, Juniper Ridge periodically transmitted navigational updates.

In turn, *Galactique* responded by confirming its status, using the twin high-power lasers that had been elevated from its service module shortly after launch. The beam-sail itself, no longer serving as the propulsion system, now performed a second role as the ship's receiving antenna, using sensors threaded through its carbon-mesh surface.

On the whole, though, the ship's navigation system was mainly autonomous. It had to be. Although the time dilation effect of .5c caused the hours to pass much more slowly aboard *Galactique* than they did on Earth, many years went by between the moment the ship sent back its confirmation signal and the moment it was received on Juniper Ridge.

I was fifteen years old when I learned that the message I'd sent Sanjay had been heard.

This was one of the few good things that happened to me in that year of my life. When my grandfather, who'd read the message the night before during his watch in the MC, told me about it the following morning over breakfast, it came as a poignant reminder of one of the last fond memories I had of my father, who was no longer living on Juniper Ridge.

Dad had become tired of the observatory's isolation. As the years went by, he gradually came to regret leaving behind the freewheeling life he'd led before rejoining his family and sharing their commitment to the *Galactique* Project. He'd been a drifter before then, and as he approached his forties, he began to miss his old ways. My father still loved me, but relations with my mother had become strained. They still

slept in the same bed, but days would go by when they wouldn't even look at one another, let alone share a kiss. The Kick Inn had become the center of his social life, and there were nights when he didn't even bother to come home but instead crashed on the couch of one of his drinking buddies.

We didn't know it, but he'd also met a local woman, a lady named Sally Metcalfe who liked single-malt whiskey as much as he did. Their friendship didn't become a full-blown affair for quite a while, but it wasn't lost on Mom that her husband's eye had begun to wander. She never fully recovered from the head injury she'd sustained years earlier, and her distrust of outsiders soon extended to Dad as well. I often heard my parents arguing from the other side of the wall that separated my bedroom from theirs, and although my grandparents tried to bring peace to the family, it was becoming increasingly obvious that, little by little, Dad was withdrawing from us.

One Saturday afternoon shortly after my fifteenth birthday, I went with Grandpa and Grandma on a shopping trip to Pittsfield, the nearest large town. Uncle Win and Aunt Martha were in California for an astrophysics conference at UC Davis, and Dad claimed to not be feeling well, so we left Mom in the MC while we went to buy new clothes for me.

Pittsfield shopping trips were always special, and I didn't get new clothes as often as I would have liked. It was a happy day for me until we returned. The first thing we noticed when we pulled up in front of the house was that Dad's car was missing.

Mom was still in the observatory, analyzing the latest data received from *Galactique*, so she was completely unaware that, sometime in the last several hours, he had thrown his clothes into a couple of suitcases, left a brief, impersonal note on the kitchen table—*Going away for awhile. Don't call me . . . I'll come back when I'm ready!*—and taken off.

Grandpa tried calling him anyway, but he never received an answer. Although my father's car was found in the parking lot of the Boston transtube station, his phone's GPS locator remained active for a few days, so Grandpa was able to track Dad's westward route on the tube through New York, Pennsylvania, and Ohio, until the signal vanished in Indiana. Apparently Dad remembered that he could be traced that way and ditched the phone while changing trains at the Indianapolis station. Grandma went into Crofton and visited the Kick Inn, and from its denizens she confirmed what Mom had suspected: Dad had been seeing another woman, and apparently she'd persuaded him to run away with her. Where they were headed, though, was anyone's guess. The drunks only knew that Sally used to live "somewhere out west" and that she'd often talked about going back.

I spent the next couple of days in my room, lying in bed with the blankets pulled up over my head, refusing to talk to anyone. Through the wall, I often heard Mom crying. Sometimes we both wept at the same time, but never together. Truth is, I had never been as close to my mother as I'd been to my father. Mom had always been a little aloof, preferring the role of tutor and disciplinarian, while Dad had been the one who gave me piggy-back rides when I was little, took me hiking and swimming in the summer and snow-shoeing in the winter (when he wasn't drinking, that is), and told me about Sanjay.

Although I'd long since learned the truth—there wasn't a little boy aboard *Galactique*; it was just a story my father had made up—deep in my heart I'd always believed that Sanjay was real, if only in a metaphysical sense. But when my father broke my heart, he also broke what little faith I still had in that childhood fantasy.

My family was shattered by the loss, but we did our best to pick up the pieces. Yet things only got worse. Six weeks later, Uncle Win and Aunt Martha came to Grandpa and Grandma with news of their own. While they were at the conference, Uncle Win had learned about a teaching position that was opening up in UC Davis's physics department. The job was tenure-track, with a salary considerably higher

than what he was earning from the Arkwright Foundation; without telling anyone except his wife, Winston had quietly submitted his resume. Now the position was being offered to him, and the Crosbys had come to the conclusion that this was an opportunity too good to pass up.

I could be cynical and say that Winston Crosby's idea of the Galactique Project being a sacred trust apparently had an expiration date, but in hindsight I can't blame him or Martha. Their titles as my aunt and uncle were honorary, after all, and although we'd always thought of them as family, they'd been on Juniper Ridge for almost eighteen years. Like Dad, they were pushing forty. My mother and grandparents didn't want to see them go, but they reluctantly agreed that the time had come for the Crosbys to move on. Their car was the next to leave Juniper Ridge, never to be seen again.

Since the observatory was now being staffed by my family alone, Grandpa and Grandma decided that I needed to take on some of the work in the MC. Perhaps it was just as well. Mom had become even more reclusive, if that was possible. A borderline agoraphobic by then, she seldom left the house anymore, and when she did it was only to putter around the greenhouse that was attached to the main house, and have a silent communion with the cucumbers, radishes, and tomatoes she planted after Dad went away. In many ways she was an invalid, but it was even worse than that; heart-break had made her a ghostly presence, a specter of the woman she'd once been.

I was old enough to look after myself, though, and since there wasn't much else to do besides watch my mother silently suffer, I gratefully let my grandparents teach me what I needed to know: how to monitor the communications equipment, how to rotate the radio dish so that it could properly receive signals from the lunar tracking station, how to interpret the coded messages that periodically appeared on the screens. Grandpa still reserved for himself the crucial task of calculating the astrometric updates that occasionally needed to be transmitted to *Galactique*, but we both knew that responsibility would eventually become mine as well. Despite the retrotherapy he and Grandma had undergone when they were younger, it was clear that the years were finally catching up with them. Their hair was graying, their postures were becoming stooped, and there were times when their short-term memories for little things weren't as sharp as they used to be. Perhaps they'd never leave Juniper Ridge, but neither would they outlive *Galactique*.

But I was getting older, too, and I was no longer sure I wanted the role that was being imposed upon me.

vi

My teens were not an extension of the idyll in which I'd spent my childhood. Although I was smarter than most kids my age, Mom had done me no favors by keeping me out of school. By the time I was sixteen, I'd become painfully aware that I was not only mostly friendless, but also rather naïve.

I wasn't entirely lonely. I'd established my own online social network, and although I'd never met any of the other kids with whom I communicated, I knew who they were and what they were up to. They often hid behind avatars and screen names, but I realized that their daily lives were much different from mine. I knew nothing of what it was like to be in homeroom with a cute boy whom they really liked, and when sex came up I had to pretend to be just as wise about it as they seemed to be (they probably weren't, but I didn't know that). They bought their clothes in malls; I went shopping maybe two or three times a year, and a big day for me was when I'd get a new winter parka. They dropped casual references to sock

bands of which I was only dimly aware, let alone had seen. Yes, I could explain the Drake equation or the Doppler effect, but how many teenagers want to hear about that? Next to them, I was either a country bumpkin in bib overalls or a virgin princess locked in a castle tower, depending on the way I felt that particular day.

Naturally, I began to rebel.

I lost the argument with my mother about going to school, but she couldn't stop me from using my feet. In the afternoons, I started walking down the road to Joni and Sara's house, where I made a deliberate effort to cultivate their friendship. The twins were both fourteen by then, but in some ways the three of us were the same age; I'd learned to dumb-down a little bit when talking to them, and in return for helping them with their homework, they introduced me to music and movies and girl stuff that I wouldn't have been exposed to otherwise. Sara continued to be a bit snooty—the Ogilvys had money, as she seldom missed an opportunity to remind me—but Joni and I became close friends. In years to come, that friendship would become valuable.

And I introduced myself to sex. Let's be honest about this: I had no interest in being a thirty-year-old virgin. I wanted to get laid, and wasn't very particular about how I'd go about it. Which was just as well, because the only likely prospect was Teddy Romero. His father was another regular habitu  of the Kick Inn, and Ted himself was just a few years away from elbowing up to the bar alongside his old man. He had the necessary equipment, though, and that's all that really mattered. He was a bit surprised when I started coming down the road to the double-wide where he and his father lived and practically threw myself at him, but he obligingly took me out on a couple of dates, and didn't mind too much that I wouldn't drink with him (liquor was something I'd shun my whole life, for obvious reasons). Two or three nights like that, and I finally got what I wanted; he drove me out to an abandoned granite quarry on the outskirts of Crofton and did the deed.

Losing my virginity wasn't the rapturous experience I'd been led to believe it would be. Ted fumbled with my bra until I helped him open it and he ruined my nicest pair of panties; he had beer on his breath and he handled my breasts like they were wads of dough. I was glad I'd insisted that he wear a condom. Altogether, it was messy and rather degrading, but at least my curiosity was satisfied. Yet I had to brush my teeth twice to get the taste of his mouth out of my mouth, and I came away from the experience wondering why everyone made such a big deal about sex.

That was it for Ted. My mother was locked in her own little world, so she was unaware of my brief affair, and my grandparents obligingly looked the other way. I think they knew what I was doing and why, though, because when Ted showed up at the observatory a couple of nights later, Grandpa chased him away and told him not to come back again. I saw Teddy a few times after that, and he'd favor me with a leer and a wink, but after a while he lost interest in me, and in years to come I'd occasionally spot him while I was in town, usually when he was lurching in or out of the Kick Inn.

By then, I had other things to worry about.

vii

When I was eighteen, two things happened: I left home, and the Arkwright Foundation got in trouble.

College was both inevitable and welcome. I'd earned a GED after passing the state exams with such high scores that the local board of education made me take the tests again, this time under close supervision, just to make sure I wasn't cheating. They had a hard time believing that a girl who'd been home-schooled since age six

could still manage to land in the top 1 percent of all students in a state known for the quality of its public education. Not only did I ace the GED exams, though, but also the SATs, and those scores got me into UMass.

I would have liked to have gone to school a bit further away than Amherst, but my mother wasn't willing to loosen the leash quite that much. So I compromised with her; I'd spend two years at UMass, and if my grades held up and I still wanted to move on, she'd let me transfer to an out-of-state college if I could get into one. Which was fine with me. I intended to major in physics, and I had my eyes set on UC Davis. Although they'd long since left Juniper Ridge, my family had kept in touch with the Crosbys, and Uncle Win promised me that he'd put in a good word for me with the admissions office.

Try to understand: I'd lost interest in *Galactique*. I'd grown up hearing about the ship, but it had been years since I'd believed in the little boy I'd once thought was aboard. For me, the Arkwright Foundation was something that was started by my great-great-grandfather and now belonged to Mom and my grandparents. I'd be an old lady by the time it reached Gliese 667C-e; the last thing I wanted was to find myself still sitting around the observatory, waiting for a weak signal from a distant star. My father was gone, the Crosbys had moved away, and now it was my turn to do the same.

So I packed my bags, kissed Mom and Grandma goodbye, and then Grandpa drove me down from the mountains. Compared to where I'd come from, the UMass campus was like a major city, and the dorm I moved into was more alien than the starship now a little more than nine light-years from Earth, but within a few weeks I'd almost entirely forgotten about *Galactique*.

Unfortunately, the rest of the world didn't do the same.

I'd settled into undergraduate life and was making friends with my fellow students—I was shy at first, but soon discovered that I wasn't that much weirder than anyone else there—when the Arkwright Foundation found itself receiving unwanted attention. A couple of years earlier, Grandpa had come to realize that the foundation was beginning to run low on funds. From the beginning, it had depended on investments made in various private enterprises, mainly the space companies that had developed the technologies upon which the *Galactique* Project depended. The seed money for those initial investments had come from the royalties and licensing rights of Nathan Arkwright's work; the foundation derived its start-up income from the *Galaxy Patrol* books and movies, and for a long time the cash flow had been sufficient for the foundation to pursue its objectives.

But *Galactique's* enormous development, construction, and launch costs had drained the funds. Since then, most of the investments that once provided a stable source of income had dried up when the supporting companies either folded or were bought out. Even the *Galaxy Patrol* franchise had sputtered into oblivion; no one but old people remembered Hak Tallus anymore. For a short while there had been talk of building *Galactique II*, but the money simply wasn't there. And although the foundation no longer had to pay for anything except Juniper Ridge, even those costs had become burdensome.

So Grandpa, who'd become the foundation's president and chief financial officer as well as *Galactique's* mission director, decided to take the unprecedented step of approaching the federal government for financial assistance. He'd made a request to the National Science Foundation for an annual grant of five hundred thousand dollars on the grounds that *Galactique* was an interstellar probe launched for the benefit of all humanity and that the world would benefit from whatever knowledge we eventually learned. *Galactique* was well known to everyone, of course—the book Grandma had written about the project had been a bestseller—so the NSF had no

trouble agreeing to Benjamin Arkwright's request, and soon Juniper Hill had a new source of funds.

Then some tightwad junior congressman from a red-dust state caught wind of this particular line item in the federal budget, and although five hundred thousand was barely worth mention in the grand scheme of things, he decided that it was worth investigating. He claimed that the money would be better spent on drought relief in his district, but I suspected that he was looking for a way to bolster his own political career. In any case, he sicced his staff on the foundation and they dug deep into its history, and within the dim shadows of the past they discovered a dirty little secret: it seemed that the Arkwright Foundation had once bought a senator.

My grandparents didn't tell me about the subpoena they'd received. They were worried that it might distract me from my studies, and besides, neither of them took it very seriously. And my mother, of course, was mostly oblivious to the whole thing. So I was unaware of what was going on until my advisor happened to read about it in the news, and when he told me about it, I immediately called Grandma.

"What the hell is going on?" I demanded.

"Oh, it's nothing to worry about," she said, as breezily as if we were talking about the unseasonal nor'easter that had just dumped six inches of snow on our part of the state. "Some fool in Washington sticking his nose where it doesn't belong, that's all. You shouldn't be concerned about it."

"It's a subpoena, Grandma! It means you and Grandpa are going to have to testify before Congress!"

"Just a subcommittee hearing, dear. Grandpa's doing the talking, and he's getting a lawyer to help him with the testimony. . . ."

"A lawyer!" The only time my family had ever hired a lawyer was when a contractor had done a lousy job installing a new septic tank for the house. We'd smelled trouble then, and I was getting the same kind of stench now.

"Just to give advice. Honestly, Dhani, it's . . ."

"And what's this about the foundation paying off a congressman to get an exemption from—" I stopped to glance at the news article I'd pulled up on my slate—"the Domestic Space Launch Act? No one ever told me about that."

A pause. "That was a long time ago, and it's not what it sounds like. The press have got it all wrong, and so does the subcommittee." Another pause. "Honey, I really can't talk about it. Besides, you know how bad the phones are out here."

The phones at Juniper Ridge had always worked fine. Grandma was giving me a hint that she suspected they might be tapped. Something cold slithered down my back. "Do you want me to come home?" I asked. "I can get out of classes and take the bus back if you . . ."

"Oh, I don't think that's necessary." Another pause; this time, I heard Grandpa say something in the background. "Well, it would help if you could come back for a few days and keep your mother company when we're in Washington. Do you think you could do that?"

"Sure, of course." After Dad had gone away, we'd been careful never to leave Mom alone for very long. My mother's mental state was too fragile for us to expect her to take care of herself. "When do you want me to come home?"

"Two weeks from tomorrow." Grandma's voice brightened again. "Really, Dhani . . . it's nothing to worry about. We've got the situation well in hand."

A couple of weeks later, I took a few days off from school and returned home, catching an omnibus from Amherst and getting off in Crofton, then hiking the rest of the way to the observatory. My grandparents had left for D.C. only a few hours earlier and Mom was already beside herself; it took an hour or so just to calm her down and let her know that she hadn't been abandoned. Besides gardening, the one thing she

was still capable of doing on her own was standing watch in the MC, but I checked anyway to see if there were any new messages. The last was a routine status report transmitted nearly twenty years ago and received just last week. All was well. I went back to the house and made dinner for Mom and me.

Next morning, we sat together in the living room and watched the subcommittee hearings. They were being carried live on one of the Fedcom sites; I put it up on the holo, and it was almost as if we were seated in the hearing room. As Grandma told me, Grandpa was the one doing the talking; a young woman not much older than me was seated at the witness table beside him, and while only a handful of people were visible in the background, I spotted Grandma directly behind Grandpa and his attorney.

They were outnumbered by the members of the House Ways and Means oversight subcommittee. The chairman wasn't the same congressman who'd made the accusations against the foundation; that was Rep. Joseph Dulle (pronounced "doo-lay," unlikely as that was), a moon-faced guy with a flattop haircut who looked like he'd probably spent his adolescence yanking up the underwear of smaller kids.

The chair yielded the floor to Rep. Dulle, and he opened with a broadside attack. After it had come to his attention that the Arkwright Foundation had been the recipient of over one million dollars in federal outlays—"for a project of dubious value even in terms of scientific research"—his staff had investigated the matter and discovered that, even though the foundation was claiming to be a nonprofit organization, it had derived most of its income from investments in some highly profitable enterprises, "making its nonprofit status suspicious at the very least." To make matters worse, his staff discovered that, during the 2036 presidential election, the foundation had contributed nearly three million dollars to the political action campaign supporting the late Sen. Clark Wessen, who'd unsuccessfully sought his party's nomination. Wessen, in turn, had not only publically come out in support of the Galactic Project—"an unusual thing for a presidential candidate to be addressing when there were far more important matters on the agenda"—but also introduced and pushed through a Senate bill granting the foundation an exemption from the Domestic Space Access Act, thereby allowing it to use the Ile Sombre Space Launch Center instead of U.S. launch sites "as another means of avoiding having to pay federal taxes and user fees."

"Now the Arkwright Foundation has found another means of fleecing the American taxpayer," Dulle continued. "Get it to pay millions of dollars to support a space probe that was launched over twenty years ago. In essence, we're being asked to spend money on an abandoned observatory occupied by the surviving members of the family who started the foundation in the first place, who use technical jargon and high-minded promises as a way of misappropriating taxpayer funds for their own use."

Dulle was staring straight at my grandfather when he said this, as if expecting his angry gaze to cause Grandpa to hide under the table. If so, he must have been disappointed. My grandfather listened with an amused smile and patiently waited until the congressman was done. Then the chair gave the floor to him, and Grandpa switched on his table mic and began his defense.

Grandpa held his ground well. While maintaining a respectful tone, he managed to be just patronizing enough to sound like a respected scientist lecturing an upstart political hack on the nuances of public policy. He pointed out that, while he appreciated the subcommittee's interest in these matters, the fact remained that the principal figures in this investigation were long gone; Sen. Wessen's presidential campaign was a footnote in the history books, my great-grandmother, Kate Morressy Skinner, had passed away nearly twenty years ago, and neither of them were still around to

defend themselves. He then went on to say that, under the federal laws of the time, nothing either of them had done was illegal. The Arkwright Foundation's contributions to Sen. Wessen's PAC had been in the interest of a public servant whose social agenda the foundation agreed with; likewise, there had been no pressure on the senator to support the Galactique Project or introduce legislation that would make its launch operations more viable from Ile Sombre than if they had been conducted at similar facilities on American soil. The foundation's investments had been completely legit, with the profits being wholly devoted to research and development of *Galactique*, and since most of those companies were no longer supporting the project's operations in western Massachusetts, the foundation had been forced to request modest funding from the federal government.

"This isn't a free ride for anyone, Mr. Dulle," Grandpa said. "This isn't an attempt to fleece anyone. Galactique is an ongoing effort to expand the human presence into the cosmos, to establish a new home for our race. Until recently, the Arkwright Foundation has succeeded in doing this with the barest support from the American government. The money we've received from the National Science Foundation keeps the lights on in our Mission Control center and allows the three people who monitor the spacecraft to live there full-time. You're welcome to visit us at any time, and you'll see that we're hardly in the lap of luxury."

It was a good defense. I thought Grandpa's testimony was a superb takedown. But as he finished, my mother spoke up for the first time.

"He's right, you know," she said quietly.

"Of course he's right." I was grinning. "Grandpa kicked his . . ."

"No . . . I mean *he's* right." She pointed to Dulle, who was taking a moment to study his notes. "He knows the truth. Ben's just covering up."

I stopped grinning. "You're saying the project's just a scam? Mom, you know better than that."

She glared at me. "Of course it's not a scam. I built *Galactique* with my bare hands, didn't I?" She often said that, even though it technically wasn't true. "But your great-grandmother told me the whole story after I married your—" she stopped herself before she could mention Dad, which she no longer did "—after I got married. Yes, the foundation bought off Wessen. The money was funneled through his PAC, but I bet he didn't spend a dime of it on his campaign. Everyone knew he didn't have a chance, anyway . . . he got knocked out of the race in the New Hampshire primary."

This was the first time in ages my mother had spoken much about anything except radishes and tomatoes, but I hardly noticed. "So you're saying there really was a payoff?"

"Senator Wessen was the best politician money could buy, and we had him in our pocket." Then she smiled at me. "I think I'd like some tea, dear. Would you make some?"

I didn't know what else to say or do, so I got up from the couch, went into the kitchen, and put the teapot on the stove. I stood there for a long time, watching the steam slowly rise from the spout as I played with the teabag between my fingers. No one had ever told me any of this. Until a couple of weeks ago, I'd never even heard of Sen. Wessen. And while I could hardly blame my great-grandmother for doing what needed to be done in order to get *Galactique* off the ground, it was still disturbing to learn that the Arkwright Foundation had indulged in some rather sleazy tactics to achieve its goals.

The subcommittee had begun to question Grandpa when I returned to the living room. Rep. Dulle had distributed copies of Sen. Wessen's campaign records to the other members, and they were coming at my grandfather from all sides. Suddenly, Grandpa didn't look so certain of himself. Behind him, Grandma sat stiffly in her chair. Although her face showed no expression, I could tell that she was nervous.

"Better hope those guys don't have the goods on us," Mom said as I handed the tea mug to her, "or we're screwed."

But they did. And we were.

viii

The congressional investigation was the beginning of the end of federal funding for the Arkwright Foundation. Despite Grandpa's best efforts, Dulle got his way. He had allies on both sides of the hill, and under pressure from the House and Senate, the National Science Foundation cut its appropriation, as meager as it really was. Once again, Juniper Ridge was on its own, but even as my grandparents scrambled to find a way to make up for the loss, worse things were happening far, far away.

About the same time this was going on, *Galactique* was approaching a star system about midway to Eos: Gliese 832, a M-class red dwarf 10.5 light-years from Earth. This nameless little star didn't have much going for it: a couple of gas giants, but no Earth-mass planets within its habitable zone. The ship would pass through the outermost reaches of the system, though, so the mission planners had decided to have the ship conduct a brief survey as it swept by, just in case there was anything there worth noting. Besides, it would give them a chance to calibrate the ship's sensors and make sure they were functioning the way they were supposed to once *Galactique* reached Gliese 667C, even though it would take more than a decade for the results to reach Juniper Ridge.

Galactique's beamsail had long since ceased its primary function, but since then it had become useful for something else, a shield against the interstellar dust that would have chewed the ship apart if the sail hadn't been there. The sail was probably riddled with pinholes by the time *Galactique* made its flyby of Gliese 832, but it should have deflected anything that might have damaged the ship.

It didn't.

We'll never know exactly what happened, because the AI didn't report a specific cause, so we can only guess. The most likely scenario is some bit of transient debris in the outer system—a tiny piece of a long-dead comet, a minuscule fragment of a stray object—came in at an oblique angle that caused it to miss the sail entirely and, in a one-in-a-billion chance collision, hit the ship. It couldn't have been very big, or else it would have destroyed *Galactique*; in fact, it may have not much larger than a piece of gravel.

Size doesn't matter when it comes to something like this, though, because the effect was catastrophic. It knocked out communications with Earth.

Galactique carried two 1,250-watt lasers, powered by the ship's nuclear reactor and mounted side by side outside the service module. The reason for this redundancy was that, even if one laser went dead, the other would continue to function. Yet it wasn't the lasers themselves that were hit, but something else: the electrical bus that supplied juice to the array. That was in an exposed part of the service module outside the hull plates protecting the ship's interior components. Perhaps the lasers should have been independently mounted, each with its own bus, but no one can predict every possible contingency; we can't blame the engineers too much for failure of foresight.

In any case, our hypothetical little rock clipped the line. In that instant, *Galactique* went dark.

The AI would have detected the problem immediately, if not the precise cause, and acted upon it. The array was withdrawn into the service module, where the

spider-bots went to work on it. By the ship's internal chronometer, the repair job probably took only a few days, but time dilation made it seem much longer to observers back on Earth. We didn't even know about the accident for more than ten years.

By then, a lot had changed back home.

ix

I met Robert in the second semester of my sophomore year, which I'd originally intended to be my last hurrah at UMass. If it hadn't been for him, I might have gone ahead with my original plan to transfer to UC Davis and move out west.

By then, I felt comfortable enough about matters at home to think about leaving Massachusetts and setting out on my own. Although the Galactique Project was no longer receiving federal funds, Grandma came up with the idea of turning the Arkwright Foundation into a publicly supported nonprofit, thus allowing them to sell memberships, conduct fund-raising drives, and otherwise do whatever it took to keep the MC open and maintain the communications lifeline with the ship (it would still be many years before we learned about the accident). My mother found a new pastime in running the foundation website, and Grandma took to writing a monthly newsletter that told the foundation's supporting members what was happening on Juniper Ridge.

Rep. Dulle continued to harass us—not satisfied with depriving the Arkwright Foundation of NSF funding, he was also determined to have the Justice Department open its own civil investigation—but we were assured by the foundation's attorney and our own congressman that he wouldn't get far. With Sen. Wessen's buy-off decades in the past and the principal figures involved with the scandal long since deceased, no one was taking Dulle very seriously. The bastard got his pound of flesh, and he'd have to be happy with it.

The foundation was just scraping by, but Grandpa was confident it would survive. I came home for the summer and helped around the place, but already I was itching to leave. During my freshman year I'd taken weekend trips with my friends to Boston and New York, where I'd ridden gondolas through flooded downtown streets and caught plays at rooftop theaters. I'd seen a side of life far different from tiny little Crofton, and I wanted more of it. And although Mom still wanted me to stay close enough for her to feel as if I was safe from the sinister forces she persisted in believing were ready to pounce—Dulle had replaced the New American Congregation as her nemesis—Grandma assured me that Mom was getting along well enough that I didn't need to be concerned about her. If I still wanted to go to California, no one would stand in my way.

Then I met Robert.

As these things sometimes happen, it was entirely accidental. Some oaf brushed up against me as I was leaving the serving line in the student union cafeteria and caused me to drop my tray. The carton of milk on it fell upon the shoes of the student behind me, and as I stammered my apologies he stooped down to help me clean up the mess. I looked up and found a pair of quiet grey eyes regarding me with amusement and just a bit of interest. He put aside his own tray, asked me to wait a minute, then went back into the line and replaced everything I'd lost, running his thumb across the scanner to pay for them. And then he asked if I'd join him for lunch.

The was Robert Ignatz. Not Rob or Bob, and never Bobby—Robert. He was tall and kind of skinny, with a thatch of dark brown hair that was comb-resistant and a

shyness that was almost as deep as my own. He was an art student, studying holosculpture with a minor in industrial design, which is why we'd never shared a class. Indeed, if it hadn't been for the cafeteria accident, we might never have met. Speaking to girls had always been a problem for him, so he took his milk-soaked shoes as a heaven-sent opportunity to meet one.

Hell if it didn't work. Robert and I had lunch together, and when it was over I gave him my number and let him know that I wasn't doing anything special that weekend, and that was how things got started. I'd met a few guys during the last couple of years at UMass, but none were especially attractive. Indeed, most reminded me of Teddy Romero; ten minutes with them, and it was obvious what their intentions were. I'd begun to wonder whether I was a lesbian or destined to become a nun when I met Robert, who didn't even try to take my hand until I took his first and nearly fainted when I stopped him on the sidewalk outside the theater where we went for our third date and told him that I wouldn't mind a kiss.

Besides social awkwardness, Robert and I had a couple of other things in common. The first was little previous sexual experience. When we finally mustered the courage to go to bed together—I kicked my roommate out for the night; she didn't argue, just went down the hall to shack up with her own boyfriend—I discovered that it didn't matter very much that I'd only once before been with a guy, because that was one time more than my dear sweet Robert had been with a girl. But he was as tender as Teddy had been callous, and also delightfully indefatigable. We didn't sleep much that night.

The second was that he'd also come from a broken family. His mother had left when he was young, and his father never seemed to care very much for him. Although they lived in Connecticut, he went back as little as he could; his dad considered the presence of a grown-up son to be an impediment to his new life as a roaming stud. So Robert had made the UMass campus his home, and he'd already decided that he'd remain in Amherst after graduation; he liked it there, and he had a line on getting a job at an industrial design studio in Springfield where he worked part-time as an intern.

When he told me this, I knew that I was going to give up California. If the choice was between transferring to UC Davis and staying at UMass with Robert, then it was obvious which way I'd go. No regrets. By the second semester of our junior year, we'd left the dorms and found an off-campus apartment, and when we graduated a year and a half later, I walked away with a diploma under one arm and the other around my best friend, lover, and chosen companion for life.

So I didn't move out west, but instead remained in New England. That's another reason why I was lucky to have met Robert. The decision to stay close to home changed my life when Na came.

x

Everyone who was alive at the time remembers where they were and what they were doing when the world learned of the existence of 2099 NA-2.

I was twenty-nine years old, a science teacher at Amherst High, and living with Robert in a two-century-old farmhouse in the nearby town of Leverett. We'd never married and saw no real reason to do so; our relationship was solid, and since we both had parents whose marriages had ended badly, we didn't want to jinx things by repeating their mistake. Robert worked out of the house; his rising reputation as a holosculptor had enabled him to leave his job at the design firm a couple of years earlier to set up his own studio, where he earned a little extra money teaching students the fine art of painting with light. We had no children, but that was something

we were considering; in the meantime, we were happy contributing to the education of other people's kids.

So I was in the faculty room between classes, having coffee and glancing over the homework my students had just sent me, when another teacher said, "Oh, my god, *no!*" I looked up. The wallscreen was logged to a newsnet, and the first thing I saw was something that looked like a fuzzy little white blob against a black background.

From my childhood on Juniper Ridge, I'd learned to recognize a radiotelescope image when I saw it. My first thought was that it was a star, or perhaps a newly discovered exoplanet somewhere many light-years from Earth. But it was neither, and much closer than that. It was the monster we'd all come to know as Na.

When it was first discovered four months earlier by Spaceguard's orbital telescope, 2099 NA-2 appeared to be just another near-Earth object whose elliptical orbit would carry it past our world. There are nearly countless NEOs like it, but the vast majority come no closer than the Moon. This particular asteroid was a little more than half of an a.u. from Earth when it was initially spotted, and it was first believed that it would come no closer than the Moon; as a matter of routine, it was classified as a Potentially Hazardous Object, worth watching but probably no more hazardous than any of the many PHOs discovered every year. Shortly after this particular asteroid crossed Mars' orbit, though, planetary astronomers reexamined the data and came to the realization that it was much more dangerous than that. A Spaceguard alert team at the Lowell observatory in Arizona was assigned to study 2099 NA-2, and what they found caused them to immediately contact their counterparts in Hawaii and ask them to confirm their findings. A few days later, the Maui observatory delivered its verdict . . . and it was grim indeed.

First, 2099 NA-2 was on collision course with Earth. Traveling at 27,000 mph, in two and a half months it would sail straight into our planet.

Second, and worse, this was a *big* asteroid. A class-C carbonaceous-chondrite rock shaped like a potato, it was about half a mile wide and a little more than a mile long—as newscasters would become fond of calling it, "a flying mountain" (the name "Na" came a little later; the phonetic pronunciation as "nah" was irresistible). It wasn't going to be another dinosaur-killer like the one that turned tyrannosaurus rex into an interesting fossil, but nonetheless June 17, 2099, was going to be a very bad day for every living creature on Earth.

Typically, the public was the last to know. The highest echelons of the world's governments were the first to receive the information, and as conference room lights burned late in capitals from Washington D.C. to Beijing, it was secretly agreed that the news would be withheld until the various defense and science ministries got their acts together and all the options were studied. By then, it had been determined that Na would likely come down somewhere in the Pacific, which was both good news and bad; good because it would miss any major land masses, bad because of the potential long-term effect on the global climate, not to mention the immediate consequences for the coastal areas and islands in the region.

There was one mitigating factor: Na was still far enough away that something could be done about it. Obviously, the coastal population centers and island chains of the Pacific would have to be evacuated in advance of the inevitable tsunamis. Yet there was also the possibility, however slim, that Na might be diverted. In fact, when the first news conference was held, it was announced that the *Comstock*, an asteroid-mining spacecraft belonging to Translunar Resources that was currently operating just beyond the Moon, was already on its way to deep-space rendezvous with Na. Once it arrived, *Comstock's* crew would undertake the mission of planting their mass-driver on Na and using it to nudge the asteroid into a new trajectory,

We were told not to panic, that the authorities were on top of the situation and that doomsday was not inevitable. And for the most part, people took it well. Generally speaking, there wasn't the mass hysteria and anarchy that many predicted would come from an announcement like this. To be sure, there were those who fortified their homes, grabbed every firearm they could lay their hands on, and prepared themselves for the end of the world (for which, I suspect, many of them secretly hoped). By and large, though, the vast majority of individuals determined that they would do what they could to help their friends and family survive. Some found solace in religion, others in a steadfast faith in the human spirit. Some even believed that the whole thing was either a hoax or just a scare that would soon blow over, and everyone would wake up on June 18 to find that the world was just the same and nothing had changed.

In any case, the public was repeatedly assured that there was a strong probability that *Comstock's* mission would be a success and that the mandatory evacuations were only a precaution. Only a relatively few people knew the mission was a long shot. Until then, asteroid miners had succeeded in moving NEOs no more than a few hundred feet in diameter. Na was much larger than that, and its greater mass meant a correspondingly higher inertia; *Comstock's* mass-driver might not be adequate for the task. And blowing up the asteroid was out of the question; even if *Comstock* was carrying explosive charges sufficient for a job of that magnitude—which it wasn't—it would have only meant that, instead of getting hit by one big rock, Earth would be subjected to a rain of smaller rocks, some of which might come down in populated areas. Not only that, but it would take the mining team almost three weeks to reach Na, during which time the asteroid would have traveled over twelve million miles closer to Earth, shaving the odds of success that much finer.

The authorities deliberately understated the chances for a successful diversion in order to avoid a mass panic, and for a while they were successful. For a little while, life went on as usual. But as the realization of the magnitude of the disaster and its long-term consequences—namely, a global winter that could last several years—slowly sank in, even communities far from the projected impact zone began making preparations.

The week after the announcement was made, the Amherst board of education voted to suspend school indefinitely so that children could help their families do whatever needed to be done. Suddenly, I no longer had a job. Which was just as well, because a couple of days later, Grandpa called and asked me to come home.

Grandma had passed away a couple of years earlier, leaving him and Mom alone on Juniper Ridge. So he'd been forced to divide his time between monitoring the MC and taking care of her, and although she'd lately become a little more independent, it was still a stretch for a man in his eighties who'd passed the age for retrotherapy. But that wasn't all.

"Dhani, your mother's scared," Grandpa said. "She'd been doing better, but now . . ."

"Is she pulling back into her shell?"

"I'm afraid so, yeah. There's days when I can barely get her out of the house, and when I talk to her, she keeps saying that she wishes you were still around." A sigh. "I know it's a lot to ask, but if you and Robert could bring yourselves to come home, even for a little while . . ."

His voice trailed off. He didn't say the rest, nor did he need to. Mom had accepted Robert only grudgingly, and not without some initial suspicion. She'd always distrusted strangers; in her mind, Robert was the outsider who'd taken her daughter away from her. Robert had done his best to get along with her, but she'd never completely warmed up to him, and so our visits had been for only a few days at a time. What Grandpa was talking about, though, was a longer stay. Much longer.

I glanced across the living room at Robert. He'd linked his earjack to the house phone and was quietly listening in. Our eyes met, and he answered my silent question with a nod. "Of course we will," I replied. "Just give us a few days to board up the place and we'll be back."

"Thanks. I appreciate it." He let out his breath in relief. "Tell you what . . . I'll even move upstairs and let you two have the downstairs bedroom."

"That's all right, Grandpa. I think we can manage without it." Hearing this, Robert gave me a grim smile. We'd have less privacy upstairs, with Mom's room next to mine, but I didn't want Grandpa to have to climb stairs more than he had to. I decided to change the subject. "How's *Galactique* doing? What's the latest?"

Another pause, this time longer. "I don't know," he said at last. "I didn't want to tell you this, but . . . we lost contact about ten days ago. The lunar station hasn't received any telemetry for over a week."

"Nothing?"

"Nothing. Not even a status report. *Galactique's* gone dark."

Again, Robert and I traded a look. He knew what that might mean as well as I did.

"We'll be home as soon as we can," I said.

xi

In hindsight, it's fortunate that Juniper Ridge had always been self-sufficient. Because my father and grandparents dreaded having the MC knocked out of commission by a local power failure, they'd set up solar panels to provide the observatory with electricity, and the rest of our power came from the town's wind turbine on a nearby hilltop. The house drew its water from deep artesian wells, and Mom's obsession with the greenhouse meant that we'd have food, even though we would probably have to tighten our belts a bit. And there were other things, like the snowplow Grandpa had attached to the front of his truck and the stockpiles of canned food we customarily kept for the winter months when we couldn't easily go shopping. So we were better prepared than most.

Still, Robert and I had our hands full as soon as we arrived. The roof of the main house badly needed to be resingled, the firewood supply was down to half a cord, and the windows would have to be freshly weather-stripped. Grandpa was in no shape to tackle these jobs on his own, so it fell to us to prepare for Na's aftermath. Luckily, the asteroid had picked a good time to make its appearance; in New England, late spring is the best season to take care of such matters.

But Mom was in bad shape. As Grandpa told me, the news about Na had messed up her mind, sending her back into the depression she'd struggled with for as long as I could remember. She welcomed me with open arms and tears, but only gave Robert a tentative handshake and stared in horror as he carried our bags inside. Things might have been a little better if we'd been officially married, but . . . well, too late for that now. She gradually accepted the fact that he was living in the same house, but it took her a week just to get used to the idea that she'd have to share the upstairs bathroom with a strange man.

Yet we received aid from an unexpected source: Joni Ogilvy.

In the years since I'd grown up and moved away, my teenage best friend had changed as well. While her twin sister Sarah had moved to London and become an executive at Lloyd's, Joni had remained in Crofton after her parents' deaths to get married and take over the family's horse farm.

Tall and well-built, with long cornsilk hair and cool green eyes, Joni could have been a runway model if she'd cared to go that way, but she was as direct and no-nonsense as only a country lady could be. It had been quite a few years since I'd last seen her, so I was surprised the day she and Brett walked down the road to our house. Noticing Robert climbing a ladder to the roof, Joni told me that they had a couple of pallets of extra shingles behind the barn left over from their own reroofing job and that we were welcome to them. Considering that every hardware store in western Massachusetts was being cleaned out of stuff like that, it was an offer that was both generous and impossible to refuse.

Teddy Romero was long gone. After his father died, he'd sold the trailer and left Crofton. No one had ever seen him again. Good riddance. At least I wouldn't have to worry about having him show up at the house. On the other hand, having Joni and Brett as neighbors was a comfort. Once she and I renewed our friendship, I knew that our families would be able to rely on each other during the tough times ahead.

If only all our problems could have been solved as easily. The MC was something else entirely. While it wasn't critical to our survival, nonetheless it was the reason why my family had remained on Juniper Ridge in the first place. Yet the Arkwright Foundation had suffered greatly from Grandpa's death; member donations had dwindled to a trickle, and while the computers in the MC were old and badly in need of an upgrade, replacing them was out of the question. Grandpa had kept them going as best as he could, but without Mom helping him his efforts were inadequate at best.

I knew how to run the MC, but I didn't know how to fix it. The computers were still operational, more or less, but the radio dish no longer had a full range of motion; we could hear the gears of its platform creak from the floor above when it moved. And the screens remained resolutely dark whenever we tried to download new data from the lunar tracking station.

Was *Galactique* no more? Was its long silence an indication that the ship had somehow been destroyed? Or was it simply a communications blackout, and eventually we'd receive new data? We had no way of knowing. Every day, Grandpa sent a new query, one approximately asking *Hello? How are you? Where are you? Please respond at once!* No reply. Just more silence.

"You realize, of course, there's great irony to this," Grandpa said one afternoon.

"How's that?" I took a sip of water from a canteen and passed it to Robert. The three of us were sitting in a clearing on the hillside below the observatory, taking a break from using a chainsaw to cut up some dead trees on our property. Mom was in the dome, taking her turn at what had begun to appear to be an exercise in futility, waiting for *Galactique* to tell us that it was still alive and well.

"Your great-great-grandfather started this whole thing because he was concerned about the human race getting wiped out by an asteroid." I must have had some sort of expression on my face, because he grinned and nodded. "It's true. Not many people know it, but that's the reason why he willed his estate to the Arkwright Foundation in the first place."

"I thought it was because he wanted to build a starship. That's what Mom told me." I might have added that my father told me the same thing, too, but it had been so many years since the last time I'd seen him that I seldom even thought about him anymore.

"Oh, I'm sure that was a reason, too. Otherwise he would've had us digging bunkers." Grandpa shrugged. "But going to the stars says something that digging a hole in the ground doesn't. It says you've got hope for the future that goes beyond mere survival. Maybe it's because he was a science fiction writer that he saw things that way, but . . . well, at any rate, he was ahead of the curve."

"But the human race isn't going to get wiped out," Robert said. Then added, with just a touch of uncertainty: "Is it?"

Grandpa didn't say anything for a moment. Instead, he gazed down the hill. It was a lovely afternoon; blue sky, no clouds, warm breeze, fresh leaves on the trees. Hard to believe anything bad could ever happen to a world as perfect as this.

"Probably not," he said at last. "We survived the global climate change of the last century, what with droughts and superstorms and coastal flooding and all that. The world lost a billion and a half people, but it took decades for the population to drop. Humans are adaptive creatures, and pretty resilient when push comes to shove." He picked up a small log we'd just cut and idly began to strip off the bark. "This is different. Even if they manage to evacuate everyone from the coastal areas before the tsunamis come in, Na's going to vaporize a lot of seawater when it hits the ocean. That's going to cloud the upper atmosphere and in turn cause a climatic chain reaction." He looked up at the sky. "We may not have another day like this for a very long time. And not everyone has a greenhouse out back."

"But *Comstock* might still succeed, right?"

Grandpa and I shared a look. We understood the physics of the situation better than most people, my partner included, so we knew what a crashshoot the asteroid-deflection mission really was. "Sure . . . sure, it's got a chance," Grandpa said, then he dropped the log and bent down to pick up the chainsaw. "Well, c'mon . . . this wood isn't going to cut itself."

We spent a couple more hours on the firewood, then Grandpa and Robert went back to the house and took the truck to Joni and Brett's house to start loading the shingles they were giving us. We'd soon be repaying the favor by helping them bale hay for their horses. There was a lot of high grass growing in the mountain meadows abutting her property and ours, so the seven horses she owned would have enough to eat. They would be useful if and when there was no longer enough sunlight to adequately recharge the solar panels of our cars and the truck. And although no one spoke of it, we all knew that, if things got bad enough that we couldn't feed either them or ourselves, Joni's beloved horses might have to serve another purpose as well.

I finished stacking the wood we'd just cut, then went back up to the house. I was about to go inside and start work on dinner when I heard a vehicle coming up the road. It was still out of sight around a bend and behind the trees, so at first I believed it was Grandpa's truck—which was a little odd; it takes time to load several pallets of shingles—then it came into view and I saw that it was a big black sports van.

No one we knew drove anything like that, so I raised my wristphone and called Mom. "We've got company," I said when she answered. This was something we always did, giving her a chance to hide if she wanted to. My mother never liked unexpected visitors.

"All right," she replied. "Tell me when they're gone."

By then, I could see that it had tinted windows and light-blue all-state plates. I walked down the front path to the end of the driveway and waited until it came to a stop. The driver's side door opened and a young guy in an Air Force uniform got out. "Can I help you?" I asked.

He seemed to hesitate, as if uncertain who I was. "Are you Chandraleska Skinner?"

An odd question. It was rare that people mistook me for my mother. We bore a certain similarity, but you could only mix us up if you hadn't seen her in quite a while, and most people hadn't. "No . . . I'm her daughter, Dhani."

He said nothing, but instead went to the back of the van, slid open the rear door, and spoke to whoever was seated in back. I couldn't hear what he said. A couple of moments passed, then two people climbed out. One was a heavy-set woman with

ginger hair who wore a pantsuit that, like the van and its driver, looked government-issue. The other was a middle-aged man with white hair, thin and slightly stooped. He came out last, and for a long time he simply stared at me, as if waiting for me to say something.

"Dhani," he said at last. "You've grown up."

If he hadn't spoken, it might have taken me a couple of minutes to recognize him as my father.

xii

At the same moment, relativistically speaking, that I was looking at my father for the first time in fourteen years and trying to figure out what to say to him, *Galactique* was trying to bridge a communications gap of its own.

The spider-bots had only needed a few days to repair the laser array; it was just a matter of taking a little extra cable from the ship's spare-parts supply and splicing it into the main bus. Once power was restored to the lasers, the array was redeployed to the outer hull, where a quick test confirmed that the system was back on line.

Now came the hard part: locating Earth's position so that communications could be restored. *Galactique's* planet of origin, along with its sun and all its neighboring worlds, had vanished into the cone of darkness that lay behind the ship; the Doppler effect caused by the ship's .5c velocity had rendered them invisible. To further complicate matters, no navigation updates from Juniper Ridge had been received during the blackout. So the ship had to rely entirely upon itself to determine Earth's location and send a laser pulse in that precise direction—a feat roughly equivalent to a sharpshooter with a high-power rifle trying to hit a sparrow sitting on a tree branch ten miles away while wearing a blindfold.

Fortunately, *Galactique's* quantum AI had something our hypothetical sharpshooter didn't have: detailed star maps, a superb sense of direction based upon the ship's current position and estimated trajectory, internal chronometers accurate to the nanosecond and, most important of all, the ability to predict where Earth and the Moon would be located, not just then but also in the future. This involved a very difficult set of parallel calculations in four dimensions. It may have even taken as long as two or three minutes.

Then it fired off a message and waited for a reply.

xiii

It hardly needs to be said that I wasn't the only one who was stunned by Dad's return. When my mother walked into the living room to find her husband, whom she'd all but given up for dead, sitting there along with me and the two people who'd brought him back to Juniper Ridge, she didn't do anything but stare at him with wide, unblinking eyes. Her mouth opened, shut, opened again; I could tell that she was having trouble breathing, let alone find anything to say. She swayed back and forth on her feet, and for a moment I was afraid that her legs would give out from under her. As I rose from the couch, though, so did my father, from the armchair that had been his usual place many years ago.

"Chani . . . I'm home." Stepping toward her, he started to raise his hands. "Honey . . . I'm so, so sorry. I . . ."

"Don't." Her left hand shot up, palm open and facing outward. "Just—" she looked away, her hand trembling "—don't. I don't want . . ."

"Mom?" I headed for her. "Mom, are you okay?" Stupid question. Of course she wasn't okay.

"No . . . no . . ." Looking away from both Dad and me, she wheeled about and staggered away. My mother never had a drink for as long as I knew her, but just then she looked just the way Dad did those nights when he came home late from the Kick Inn. "Just . . . everyone, just leave me alone."

Then she was gone, stumbling back through the door from which she'd just emerged, heading back to the observatory where she'd been until I'd made the awful mistake of asking her to come over to the house without telling her who was waiting for her. I wasn't trying to be mean, nor was it as if I'd meant to say, *Surprise! Look who's home!* It was simply that I'd had no idea how to tell her that Dad had suddenly reappeared, and decided that maybe it was best if she saw this for herself. Which only goes to prove that you can be intelligent and still be pretty stupid.

I turned to Dad. He was still standing there, face as white as his hair had become, hands still raised to embrace his wife. He looked at me and said, "Dhani, I didn't . . . I don't . . ."

"Shut up." I've never hit anyone in my life, but in that moment all I wanted to do was deck him. Somehow, I managed to control myself. "Sit down," I said, and pointed to his chair. "Now talk . . . no, wait." I took a second to use my wristphone to call Grandpa. "Come home at once," I said when he answered. "Dad's come back." I didn't wait for a reply, but simply clicked off. "Okay . . . start talking."

"Perhaps it would better if I explained," said the woman who'd shown up with my father. She and the Air Force officer were sitting on the other side of the room. "I'm Cassandra O'Neill, and this is Captain Philip Jensen, and we're . . ."

"No. Him first, then you." I didn't even look at them; my attention was solely upon my father. "Go."

Dad dropped his hands and let out his breath, then he slowly lowered himself into his chair. "Dhanishta, I don't know where to begin, but . . ." He shook his head. "All right, I'll try."

Fourteen years ago, he and the woman he'd met in town—it took a while for him to even speak her name, Sally Metcalfe—had taken off for what he originally thought would be no more than a few weeks, maybe a few months at most. Their destination was Denver, her hometown, where she'd told him that she still had friends, family, a job, and something like a future.

But first, they decided to have a little adventure. After abandoning his car in Boston, they'd boarded the transtube and used it to weave their way across the country, getting off the maglev every now and then to sample the night life in the places where they landed. In this way they'd drifted from bar to bar, motel to motel, eating in crappy restaurants, nursing hangovers, doing all the things two people did when they were on a long binge and running away from whatever it was they had left behind.

It may or may not have been fun, because Dad had little memory of that time. Blackouts were part of the ride, I guess. The next time he was able to think clearly at all, it was when he woke up to find himself in a jail cell in Denver, with no recollection of how he'd gotten there. Sally was gone, and somewhere along the line his belongings had vanished as well. He never saw her again.

The biggest shock, though, was discovering that seven months had passed since the day he'd walked out of my life and my mother's.

Dad had been picked up by the Denver cops after he was found on the sidewalk outside a downtown wino bar. Someone had taken his wallet and what little money he had left, so being charged with vagrancy and public drunkenness was only the

least of his problems. He was homeless, and just to put the icing on the cake, he began to suffer the d.t.'s within hours of waking up in jail.

"Being taken to the hospital was probably the best thing that could have happened to me," Dad said. "After I got out and had my day in court, the judge realized that I needed treatment more than jail time. So I was sent to a substance abuse center and . . ."

"You're still not telling me where you've been for the last fourteen years." I didn't mean to be cold, but I was becoming impatient with him. "Not to mention why you've picked this time to come back."

"Maybe I can answer those questions," Grandpa said.

He and Robert had come into the living room so quietly that I hadn't noticed either of them. Dad looked around as he spoke. "Hi, Papa," he said quietly. "Good to see you again."

"You're looking better, son. Staying off the bottle, I hope?"

"Clean and sober for thirteen years."

"Glad to hear it. And the new job's working out?"

"Well, it's not so new anymore." Dad smiled just a little. "I've been there about . . ."

"Wait a minute!" I stared first at Dad, then Grandpa. "Am I getting this straight? You knew where he's been all this time?"

Grandpa slowly let out his breath. There were no vacant chairs left in the room, so he leaned against a wall, folding his arms across his chest. "Robert, do you think you could make some coffee, please? Thanks." Robert nodded and left the room, and Grandpa went on. "I heard from your father shortly after he went into treatment. He wanted to come back, but I didn't want to have a repeat of what had happened here."

"Which is probably what *would* have happened," Dad said. "If I'd returned, it would've been only a matter of time before I became a barfly again." He couldn't look at me as he said this. "I'm sorry, Dhani, but I'd hurt you and your mother enough already, so I took your grandfather's advice and stayed away."

"I didn't let either you or your mother know," Grandpa said, speaking to me, "because you were both in a lot of pain and it would take a long time for the wounds to heal. So I quietly kept in touch with him while he rebuilt his life, and when he was ready to leave the halfway house . . ."

"I was there for two and half years. It took me a long time to get over drinking." Dad paused, looking down at the floor again. "And when I did, I just couldn't face either of you again. Not after what I'd done."

"So we decided that it was probably just as well if he made a clean break of it, started over again out west." Grandpa was looking embarrassed as well. Perhaps he'd never expected this day to come. "I called Win and Martha Crosby and asked them if they could find your dad a job in California, and they managed to get him a staff position at UC Davis."

My mouth fell open. "I almost transferred there!"

"I know." My father slowly nodded. "I was hoping that, once you did, I might be able to reconnect with you, get you back into my life again. But . . ."

"I met Robert and stayed here."

"So I figured that perhaps it was just as well and kept my distance." Again, he sighed. "Dhani, you don't know . . . you can't know . . . how hard it's been. Even after I got straight, there hasn't been a day that I don't regret everything I'd done to you and your mother. But I was so afraid that, if I came back, I'd wind up in the Kick Inn again."

"Okay, so you stayed in California. Good for you." I wasn't ready to forgive him, but at least I understood his long absence a little better. Perhaps he was right. As hard as his departure had been for Mom, returning home only to start drinking again

would have killed her. "But that doesn't explain why you've picked this time to come home." I glanced over at O'Neill and Jensen. "Who are these people, anyway?"

"I'd like to know that myself," Grandpa said.

"This is where I come in." Cassandra O'Neill cleared her throat. "Dr. Skinner, Ms. Skinner, Phil and I are with DARPA . . . perhaps you've heard of us?" I nodded and she went on. "We belong to the special task force assigned to finding a way of deflecting Na before it hits Earth, and it's because Matt got in touch with us that we've come out here."

Jensen spoke up. "Dr. Skinner neglected to mention what Matt has been doing in California the last decade or so. He's been working with the Crosbys on applied high-energy research, contributing his knowledge of the *Galactique* Project to their efforts to use microwave propulsion systems like the one the Arkwright Foundation built to send *Galactique* to Eos as an alternate propulsion system for other deep-space vessels."

"Specifically, to the outer Solar System," Dad said. "There's been proposals to extract helium-3 from the upper atmospheres of Jupiter and Saturn, but nuclear propulsion takes too long to get there. Beamsails like the one the foundation built for *Galactique* could be the answer . . . we kinda leap-frogged over that when we built our ship."

"There's another application as well," O'Neill said. "It's something of a long shot, but Win Crosby has calculated that it may be possible to use the foundation beamsat to deflect Na."

Grandpa let out a low whistle. "I'll be damned. Why the hell didn't I think of that?"

I didn't say so, but I knew the reason. He'd had too many other things on his mind, like fretting over *Galactique's* loss of telemetry and taking care of Mom, to think much about a microwave satellite he'd shut down the day I was born. "Does that thing even work?" I asked. "It's been out of service for years."

"We sent a crew out there just last week to examine it," Jensen said. "It needs some repair work, but otherwise it's still in operational condition. However, it can't be reactivated or maneuvered except from here because . . ."

"We're the only ones who have the operating system," Grandpa said.

"Right. And that's why I've come back." Dad looked straight at me as he said this. "Once we get the beamsat up and running again, we might be able to use it to push Na just enough to nudge it from its current trajectory." He shrugged. "I mean, it was built to boost a three-hundred foot starship up to half the speed of light, so it should be able to shove a big, dumb rock just a few hundred feet. That's all it would take, really."

"We may be able to do that, yes." Grandpa slowly nodded as he looked away from us. "I think the three of us know enough about the beamsat to get it to do what needs to be done . . . isn't that right, Chandi?"

I looked in the direction he was gazing. Unobserved by any of us, my mother had come back into the house. I had no idea how long she'd been standing there or how much she'd heard; she said nothing, but instead stared at Dad with dark and haunted eyes. My father turned to gaze at her and she visibly flinched when their eyes met, but she didn't flee as I expected her to.

"It's possible," she said, so quietly that it was almost a whisper.

xiv

This was as close to a happy family reunion as we got. The knowledge that, for every minute we wasted, Na traveled another 450 miles, meant that Grandpa, Mom, and I didn't have time to reconcile our feelings toward Dad. Robert had barely returned to the living room with coffee before O'Neill and Jensen hustled us over to the

dome so they could inspect the MC. One look at the antique computers Grandpa had been pampering for years because the foundation no longer had the money for regular upgrades, and O'Neill was on her phone. Late that evening, an Air Force gyro touched down on the lawn outside the house, bearing state-of-the-art computers and the best technicians the Pentagon had to offer.

From that moment, Juniper Ridge and the Galactique Project fell under military jurisdiction. No one was allowed to leave the premises, and all outside phone calls or email messages were screened. Jensen would have placed soldiers at a roadblock leading to the observatory if Grandpa hadn't pointed out that doing so would have attracted the attention we didn't want. Except for Joni, people seldom visited the observatory, but everyone in Crofton would have known something was going on if they'd seen military people swarming in. He reluctantly agreed that the low-key approach was probably the best, and that's how we handled it. I went down the road and asked Joni and Brett to stay away for a few days; I didn't tell them why, and they didn't ask too many uncomfortable questions.

Along with Jensen and O'Neill, my father was installed in the cottage, which had gone largely unused since the Crosbys had moved out years ago. I don't think they saw much of the place, though. Along with Grandpa, they spent most of their time in the MC, working around the clock to help the technicians replace the old computers with the new ones and make sure the data and operating systems were successfully transferred from one to another. In the meantime, another group of technicians worked on the dish upstairs, restoring it to full operating condition. They napped in their chairs and gobbled down the sandwiches and soup Robert and I carried over from the house, and if there hadn't been a restroom in the observatory I think they would've been urinating in the bushes.

At first, Mom kept her distance. She went up to her room and hid there for the first day, emerging only to go downstairs for a quick meal. But her memory of the beamsat operating systems was sharper than my grandfather's, so it was only a matter of time before Grandpa came over to the house, went upstairs to her room, closed the door behind him, and had a long talk with her. When he came out, Mom was with him. She'd put on a fresh change of clothes and pulled her hair back, and she didn't say a word to Robert and me as she followed my grandfather over to the dome.

Robert waited until they were gone, then turned to me. "If she tries to murder your dad, do you think the Air Force guys will stop her?"

"They'd better," I murmured. "I won't."

When I went over to the MC a couple of hours later, though, I found Mom and Dad seated side by side at the master console, reading information to each other as they made their way through a complex checklist. They weren't exactly holding hands, but for a moment it almost seemed as if my father had never left. Then Dad's elbow accidentally touched hers and she immediately recoiled, and I knew that her forgiveness wasn't likely to come any time soon.

By late that afternoon, the MC was back online, this time with new computers and an operating system capable of handling the new info that had been uploaded from a NASA database. The irony couldn't have been thicker: NASA had become little more than an office building in Washington, D.C., and the Arkwright Foundation had once been the target of a congressional investigation, but now the fate of the world rested upon a neglected federal agency and an impoverished nonprofit organization. It would have been sweet if Rep. Dulle was still around to see this, but a heart attack had killed him a few years after his constituents voted him out of office.

While this was going on, a space construction team had been working on the beamsat itself, replacing the photovoltaic panels punctured by micrometeor impacts and upgrading the focusing elements. They finished their work just a few hours after

could have had in furthering the growth of English commerce is hard to see. Hakluyt the connoisseur of fine travel tales must have overcome Hakluyt the propagandist here. Soon, though, we are given English trade treaties from the reigns of Henry III and Edward I, and then on and on, volume after volume, voyage after voyage, Francis Drake and Humphrey Gilbert and Martin Frobisher and Sebastian Cabot and all the other great names of Elizabethan maritime adventure.

What, then, do Richard Hakluyt and his book of voyages have to do with our world of today, and the world of science fiction in particular?

Why, that we stand at the brink of a new frontier inconceivably greater—it is infinite, in fact—than the one that confronted the seamen of Hakluyt's day. And, after a promising start half a century ago, we are not doing much about getting ourselves out into it. I'm talking about the space frontier, of course, and my point is that a new propagandist, as industrious and dedicated as Richard Hakluyt was, is needed to spur us on into a new era of exploration. In his introductory essays, Hakluyt reminds us repeatedly that his goal is not just "the recording of so many memorable actions" or even "the increase and general multiplying of the sea-knowledge in this age," but primarily the encouragement of English commerce on a worldwide basis to further the prosperity of the realm. He did not mean a government program for sending ships far and wide; that would lead to conflict with foreign powers who had their own territorial claims, and England, having fought off an invasion from Spain as recently as 1588, had no desire to entangle itself in a new war over trade routes. What Hakluyt wanted to encourage was private ventures into distant lands, and in this he succeeded so well that even Queen Elizabeth, as a private investor, put money into these ventures. The result, as we know, was a British presence on every continent and a consequent enrichment of the nation—as well as a vast increase in geographical knowledge.

It is now some sixty years since we launched the great enterprise that culminated in the 1969 landing on the Moon, and very little has been done since then to move outward into space—a space station close to home, a bunch of orbital satellites, various unmanned planetary probes, and that's about it. No major expeditions are planned. The government can't do it, because the government is distracted by problems closer at hand, and very few private companies have shown much interest in getting out there. The space program seems to be turning into science fiction again—stories, movies, graphic novels, and not much real action.

What we need, I think, is a new Hakluyt who will compile a huge and inspiring anthology dealing with the exploration of space. Let him start with a few quaint editorials from Hugo Gernsback's early SF magazines, and an essay or two by Willy Ley, the great propagandist of space exploration who died just on the eve of the first Moon voyage; then go on to reports of the wobbly early space launches, the voyages to the Moon, the sending forth of the space probes—the complete story so far. He will need essays by scientists on the practical benefits of space exploration—the increase in technological skills that our space work has yielded so far, the mineral wealth out there, and so on and so on. And photos, photos, photos. Make it a fabulous interactive e-book, of course. Stir the imagination. Reawaken that outward urge that the Elizabethan explorers felt and that our own space pioneers of half a century ago understood. Produce a classic work of pro-space propaganda that will get us heading out there.

Is today's Richard Hakluyt already thinking of such a project? I hope so. ○



the Juniper Hill group finished theirs, and once they'd moved away, Mom and Grandpa ran a test to make sure that the beamsat was once again capable of projecting a high-power microwave beam by aiming it at a small NEO that was passing Earth at a harmless distance of about three million miles. The beam was invisible, of course, but the satellite's instruments registered it nonetheless; a few minutes after it fired, space telescopes detected a tiny dust plume rising from the asteroid's surface.

The beamsat worked, but no one was ready to break out the champagne quite yet. Hitting a little NEO was one thing. Hitting Na, and having it do any good, was another. However, my father pointed out something that Win Crosby's group had determined might be in our favor. Since Na was a class-C asteroid, it was very likely that deep beneath its crust lay primordial deposits of gaseous hydrogen, oxygen, carbon, perhaps even water ice. If the beam could penetrate the surrounding rock to heat these volatiles, it was theoretically possible that they might vent outward through the crust, therefore forming jets that would help disturb Na's trajectory.

No one knew for sure whether this would be the case. But *Comstock* was still several days away from reaching Na, and this made *Galactique's* beamsat our best hope, if not our last. So my parents, Grandpa, and Cassandra O'Neill turned the beamsat so that it was aimed at the asteroid, locked onto its position, and made sure that it was being precisely tracked. . . .

And then they fired the beam, and everyone on Juniper Ridge began holding their breath.

xv

You know the rest of the story. Or at least you may think you do, if you were alive at the time and remember hearing the news. But you weren't there on Juniper Ridge, so you don't. Here's what I saw:

For the next six days, the sat tracked Na as it fell toward Earth, its microwave beam continuously pressing the rock while toasting its surface. *Comstock* followed it from a safe distance, its crew carefully keeping out of the beam's path while constantly monitoring Na's position, watchful for any significant changes in trajectory or surface appearance. And meanwhile, back home . . .

Back home, we did what we'd always done. We waited. This time, though, it was for a different reason. For the first time, *Galactique* was all but forgotten. The fate of our little lost starship was the furthest thing from our minds.

None of us slept well during those days. We took shifts in the MC, but more often than not there were two or three people in the MC. There was a certain fascination with the screen displaying Na's position. It never seemed to change, but we watched it constantly, hoping for the moment the asteroid would deviate from the dotted line of its projected course. Sometimes there were periods when Mom and Dad would both be there. At first, they said little to each other, but as the hours became days and the days stretched into a week, they gradually began to talk a little more.

Early one evening after dinner, I stepped out of the house for a little fresh air. The Sun was just beginning to go down, and the crickets and tree frogs were commencing their nocturnal symphony. I'd only strolled as far as the driveway, though, when voices came to me from the side of the yard. Looking around, I saw my mother and father sitting together on a bench beneath a maple tree overlooking the hillside. What they were talking about, I didn't know, but the conversation was relaxed, not angry . . . and then, unexpectedly, I heard something I thought I'd never hear again.

I heard my mother laugh.

I didn't say anything, but instead quietly turned around and walked back into the house. Next morning, though, I had my own conversation with Dad. I won't bore you with the details, but we had a long talk that cleared the air about a lot of things, and when it was over I put my arms around him and gave him a long hug, and there were tears on both of our faces when we finally stepped apart.

We were a family again.

Late that afternoon, Jensen rushed into the house where everyone else was beginning to gather for dinner. He'd just received word that *Comstock* had spotted a large gaseous plume jetting from Na's surface, on the side of the asteroid facing them and perpendicular to Earth. Everyone dropped what they were doing and rushed back to the observatory, where we crowded around the console and studied the real-time images from the mining ship. Although the pictures were remote and fuzzy, nonetheless something that looked like a geyser was streaming outward from Na. *Comstock's* mass spectrometer identified it as water vapor with traces of carbon; apparently the beam had found a subsurface ice deposit and, over the course of the last several days, heated it to the point where it finally burst through the surface as a steam jet.

And then, even as we watched in awe, Na began to move from its projected course.

Here's what everyone knows: combined with the steady pressure of the beam itself, the jet caused Na to slip the necessary few degrees from its fatal trajectory until, three weeks later, it sailed harmlessly past Earth. It came close, all right—130,000 miles, a little less than half the distance to the Moon—but just far enough away that it wasn't captured by our gravity well and pulled in. Observatories and backyard astronomers in the Pacific caught telescopic pictures of a bright spot of light that slid across the predawn sky far above the ocean, but within less than a minute Na was gone.

But Dad stayed.

xvi

And so did Robert and I.

There was no reason for us to remain together on Juniper Ridge, really. Grandpa was getting up in years, but now that my father had returned, he and my mother could continue monitoring the instruments in hopes that *Galactique* might one day resume contact. Yet I didn't want to leave my parents alone while they were still mending their relationship, and since the Galactique Project was now receiving generous funding from DARPA, I didn't necessarily have to go back to teaching.

So Robert and I sold our house in Leverett and moved to Crofton, where we took up residence in the cottage. I took a new job with the state as an online tutor, and we built a studio for Robert where he could continue sculpting—he moved from holos to old-fashioned ceramic pottery, and became pretty good at that—and time passed as it always did in the Berkshires: slowly and gracefully, the seasons marking the accumulating years.

There had once been a time when all I'd wanted to do was leave this place. But if Na had taught me one thing, it was the same lesson others had learned. Our lives are short, our friends and family are precious, and sometimes it's okay to stay in one place if that's where you find your life's true purpose. Mine was on Juniper Ridge. I understood that now, and I no longer minded.

My son Julian was born a couple of years later. Again, a midwife delivered him at home . . . indeed, the very same one who'd helped Mom bring me into the world thirty-one years earlier. Mom, Robert, and Joni were with me, and Joni had to catch

Robert when he nearly fainted, but this time, no one went down to the Kick Inn and got drunk.

In fact, never again did I see my father take a drink of anything stronger than coffee or iced tea. He has remained sober ever since then. And not long after he and Mom started sleeping in the same bed again, my mother surprised us all by saying, ever so casually one Saturday morning over breakfast, that she'd like to go into Pittsfield and do a little shopping. It was the first time she'd been off the mountain in many years, and from what I could tell, she enjoyed every minute of her return to the world.

Grandpa remained with us long enough to see Julian take his first steps, then late one afternoon he took a nap and rejoined Grandma. His grave is on the hillside not far from the observatory, and every once in a while I'll go down there, freshen up the roses on his stone, and have a little talk with him.

And we finally heard from *Galactique* again.

I'd just come home from driving Julian and Joni's daughter Kate to middle school—from the day my son was born, I was determined that he'd grow up with other kids, even if Robert and I had to take him every day ourselves—when Robert rushed out of the studio and grabbed me in his arms. He was still whirling me around and laughing his head off when Mom came out of the observatory. She was smiling as she told me the news: she'd just received a message from *Galactique*, informing us that there had been a minor accident with the communications laser but that it was fixed and the ship was still on course for 667C-e.

I only wished that Grandpa could have been there, yet he'd died still believing that *Galactique's* silence was only temporary and we'd eventually hear from it again. Faith is a great thing. The trick is keeping it.

Dad sent a brief message acknowledging the signal, yet we knew that it wouldn't be received until the ship had reached its destination. Indeed, that was the last transmission from Juniper Ridge; there was no point in any further communiqués from us.

Yet *Galactique* continued to send us regular updates of its condition. Over the next twenty years or so, we received word of what it was doing as it closed in on Eos. A couple of months after Mom passed away, Dad and I were in the MC when we learned that *Galactique* had reached Gliese 667C and the AI was guiding the ship for a close fly-by of the star so that its sail could capture the red dwarf's solar wind and thus commence the braking maneuver in preparation for orbital rendezvous with Eos. Julian was on his honeymoon, but he was happy to hear the news.

Dad left us again ten months later, this time for a place where no one could follow. Robert and I were now alone on Juniper Ridge, although Julian and his wife Clarice would occasionally come to visit us. I'd just read a letter from him, telling me that I'd soon become a grandmother, when Robert walked into the room. He was carrying a printout, and from the grin on his face I knew at once it was the message from *Galactique* I'd been expecting.

"It made it, didn't it?" I asked.

"Uh-huh. Right on schedule. And there's this, too."

He handed the printout to me. It was short:

SANJAY HAS WOKEN UP, AND HE SAYS HELLO.

Robert rested his hands on the back of my chair and leaned over my shoulder. "Who is Sanjay?" he asked.

"Someone my father told me about," I replied, "a long time ago." ○

NEXT ISSUE

FEBRUARY ISSUE

Nick Wolven contributes a blockbuster novella to our February 2015 issue. Damnation Alley itself isn't much wilder than the chaos of Nick's future New York City. "On the Night of the Robo-Bulls and Zombie Dancers," you'd better watch out for those dark forces plus vampires, high financiers, rogue AIs, and sleeplessness if you expect to survive a nightmare excursion from the trading desks of Wall Street to the penthouses of 73rd Street. Fasten your seatbelt before embarking on this thrilling adventure.

ALSO IN FEBRUARY

Nebula-Award-winner **Michael Bishop's** "Rattlesnakes and Men" depicts a venomous alternate society that couldn't possibly happen here; **Leah Cypess's** young protagonist discovers that what her heart desires is not exactly "Forgiveness"; new writer **Eneaszi Brodski** makes his publishing debut with a Cold War tale about the dangerous repercussions of a "Red Legacy"; multiple Hugo-Award-winner **Elizabeth Bear** investigates why the long lived have "No Decent Patrimony"; and **Derek Künsken** evokes the haunting beauty of "Ghost Colors."

OUR EXCITING FEATURES

In his February Reflections column, **Robert Silverberg** considers the enigma of "One Hit Wonders"; **Peter Heck's** On Books looks at works by Charles Stross, Nancy Kress, James P. Blaylock, and others; plus we'll have an array of poetry and other features you're sure to enjoy. Look for our February issue on sale at newsstands on January 6, 2015. Or subscribe to *Asimov's*—in paper format or in downloadable varieties—by visiting us online at www.asimovs.com. We're also available individually or by subscription on *Amazon.com's* Kindle and Kindle Fire, and *BarnesandNoble.com's* Nook, as well as from magzter.com/magazines, Google Play, and Kobo's digital newsstand!

COMING SOON

new stories by **M. Bennardo**, **Kit Reed**, **Sandra McDonald**, **Liz Williams**, **Gregory Norman Bossert**, **Gwendolyn Clare**, **Anna Tambour**, **Suzanne Palmer**, **Django Wexler**, **Kristine Kathryn Rusch**, **Kathleen Bartholomew & Kage Baker**, **Henry Lien**, **Joe McDermott**, **Indrapramit Das**, **Eugene Fischer**, and many others!

HB²: Hannes Bok, His Book

Although this book is a couple of years old now, it's only recently come into my hands, and I feel compelled to write it up, even if only briefly, because of its eternal value and worth. It's not some flavor-of-the-month novel, but rather a career-celebrating monument that will glorify any art book-oriented library. I imagine this edition becoming highly collectible one day, too. The volume is *Hannes Bok: A Life in Illustration* (Centipede Press, trade paper, \$150.00, 462 pages, ISBN 978-1613470251), edited by Joseph Wrzos. What a gorgeous, well-researched, and comprehensive assemblage it is!

The art of Bok was once instantly recognizable by any well-read fan. Even today, if you don't know his name and see your first Bok painting ever, you'll be instantly primed to recognize others from his brush. Trained by the famous Maxfield Parrish, Bok imported Parrish's radiant otherworldly palette and fairytale landscapes into the genre. But he then filled his frames with an incredible assortment of fantastical humans, monsters, aliens, and other incredible creatures, as well as exotic architectures found only in his fervid imagination. His character designs were intense and whimsical, somewhat along the lines of Artzybasheff's, though not so surreal. Even a bit of Basil Wolverton slips in, though not so grotesque. In any case, he was unique, leaving few if any heirs today, except perhaps, to some small degree, Richard Corben and Jim Woodring.

This volume grabs all of Bok's extant work that could be found, making it the most complete of any Bok book. The images are organized in useful chronological order, so you get a sense of his career and maturation. And not only paintings

familiar or rare, but also scores of black and white interior illustrations flesh out the heavy-stock pages. (This massive book is a wrist-bender!) Essays from Bok's admirers open each section, and a small final sampling of supporting text rounds out the presentation of the artist and his somewhat melancholy life.

Anyone who appreciates masterful painting and drawing techniques applied to a unique vision of the fantastic will want to own this lavish compendium.

Subterranean Homesick News

Under head honcho William Schafer, Subterranean Press continues to publish an exemplary list. Every book from its presses shows discerning taste, quality craftsmanship, and a true sense of what makes the field of fantastika great. This time around, we look at three recent titles from them: two anthologies and a novel.

Back in 2012, I devoted an entire column here to Poul Anderson, an influential Grand Master—and a writer I grew up admiring and who remains beloved by many today. Naturally then, I glommed on to *Multiverse: Exploring Poul Anderson's Worlds* (hardcover, \$40.00, 400 pages, ISBN 978-1-59606-502-4). Edited by Greg Bear and Gardner Dozois, the book assembles sixteen stories and non-fiction pieces in honor of Anderson's many fictional universes. The tales all manage to hew remarkably close to Anderson's themes, vision, and even his style, and the factual pieces all illuminate.

After Greg Bear's touching memories of his father-in-law comes Nancy Kress with her sequel to "The Queen of Air and Darkness," "Outmoded Things." It's a quiet investigation of the ties between humans and aliens, with a focus on children. Harry Turtledove's "The Man Who Came Late" finds Holger Danske, the

hero of *Three Hearts and Three Lions*, back in his parallel world of magic—but much has changed. S.M. Stirling offers a gripping Time Patrol story with “A Slip in Time,” where Manse and Wanda Everard encounter a dangerous world where WWI never happened.

Central to the book is Karen Anderson's affectionate memoir of her years with her husband, “Living and Working with Poul Anderson.” She vividly conjures up a fannish era within living memory, of course, but which seems as fabulous as any of Anderson's subcreations. Daughter Astrid blesses the project with a few words as well.

The children of Dominic Flandry occupy center stage in C.J. Cherryh's “Dancing on the Edge of the Dark,” which has a nice melancholy tinge associated with the infamous Long Night of intergalactic decadence creeping closer. “The Linger-ing Joy” by Stephen Baxter gives us another bout of psychic time travel back to the Neanderthals, as first instanced in Anderson's “The Long Remembering.”

Eric Flint ventures giddily and gloriously into the hell world of *Operation Chaos* with his “Operation Xibalba,” while Terry Brooks parallels Kress—except focusing on the adults of Christmas Landing—in his “The Fey of Cloudmoor.”

Having a new time travel story from Robert Silverberg is a coup, and “Christmas in Gondwanaland” pulls out all the paradoxical implications of the Time Patrol, as Manse travels back to the very foundation of the chrono-regime. David Brin's “Latecomers” is anomalous in that its slambang exploration of humans and their AI “children” is not set in any specific Anderson cosmos, but results from a story confab Brin had with Anderson. Jerry Pournelle weighs in solidly with a closing memoir, “An Appreciation of Poul Anderson,” followed by Raymond Feist's “A Candle,” which gives Dominic Flandry a rousing go-round.

Larry Niven comes feverishly close to writing the ultimate Time Patrol story with “The Far End.” “Bloodpride” is Gregory Benford's Ythrian story, returning to

People of the Wind. And closing out the book is Tad Williams with “Three Lilies and Three Leopards (And a Participation Ribbon in Science),” which examines in gonzo fashion what would have happened if an ineffectual retail clerk named Pogo Cashman had substituted for Holger Danske.

The reader will put this book down stimulated to reread Anderson's original work, and marveling at the bevy of talented friends he left behind.

Wonderful as the Poul Anderson tribute volume is, what's even better is when a celebration happens while the author is still around to enjoy it. Such a happy circumstance accompanies the next festschrift from Subterranean, *The Book of Silverberg* (hardcover, \$35.00, 288 pages, ISBN 978-1-59606-643-4). Once more stepping to the helm, with the help of publisher Schafer, Mr. Dozois rounds up ten fine authors to contribute fact and fiction in honor of 1956's “Most Promising New Author,” according to a certain Hugo Award of that era!

Barry Malzberg opens with a nimble summary essay that affectionately reminds us of Silverberg's remarkable career, both in terms of magnitude and quality. A never before seen story from the late Kage Baker follows. “In Old Pidruid” is a funny and charming Romeo-and-Juliet tale about two rival parade floats and their makers during an ancient festival on that marvelous world of Majipoor. “Voyeuristic Tendencies” is a direct sequel to *Dying Inside*. Kris Rusch conjures up Maggie the Cat, a somewhat amoral young woman who has the same talent as Silverberg's David Selig. When the two meet, both lives are changed.

“Bad News from the Vatican” by Mike Resnick has its obvious ancestor in Silverberg's “Good News from the Vatican.” In Resnick's version, a robot Pope breaches the barrier between religion and politics through an excess of saintliness, leading his bishops into a moral dilemma of their own. *Nightwings* forms the inspiration for Caitlín Kiernan's “The Jetsam

of Disremembered Mechanics.” Kiernan matches the lush, Dying Earth tone and feel of the original with her tale of a female Flyer named Aelita and her quest for the origins of her kind.

Connie Willis delivers a very funny recursive “real life” account of the secret behind Silverberg’s success with “Silverberg, Satan, and Me or Where I Got the Idea for My Silverberg Story for This Anthology.” She names names and blows the lid off the supernaturally rigged genre writing racket. “The Hand is Quicker” by Elizabeth Bear draws its inspirations from Silverberg’s myriad examinations of divergent perceptual universes, and finds its protagonist down and out in an AR landscape.

Nancy Kress’s “Eaters” provides a sequel to Silverberg’s “Sundance,” wherein human drama and the planet’s alien ecology intersect at painful angles. James Patrick Kelly inverts Silverberg’s “The Pope of the Chimps” to “The Chimp of the Popes” and spins a giddy tale of a posthuman world where one man’s madness is a survival tactic. Finally, with “Ambassador to the Dinosaurs” Tobias Buckell gives us a tale of Neanderthals and big lizards in a futuristic milieu, harking back to “Our Lady of the Saupods.”

At the end of this book, one astonishing fact remains: several other volumes like this could be compiled, using totally different Silverberg inspirations, and still not exhaust his oeuvre!

The year 2014 cruelly took from us one of the giants of the genre, that longtime *Asimov’s* contributor and multiplexedly talented literary genius, Lucius Shepard. It is a loss that will resound for some time, both personally and within the field.

Shepard’s mature work, after some early childhood effusions, began only in 1983 or thereabouts, immediately sorting him into that retrospectively magnificent clade which included Jim Kelly, William Gibson, Pat Cadigan, Michael Swanwick, Bruce Sterling, Lisa Goldstein, Rudy Rucker, Connie Willis, John Kessel, Lewis Shiner, and a dozen others,

among whom—*ahem, cough, cough*—your own correspondent here was lucky enough to count himself. In the subsequent thirty years, Shepard racked up a large body of work and many awards without ever quite achieving the huge best-seller status or literary fame that his work surely merited. He remained, I think it’s safe to say, not a fan favorite, but a caviar taste for the cognoscenti. His career path involved unceasing and arduous production at white-hot stellar levels for relatively small monetary rewards, necessitating Hollywood grunt work to patch over the fiscal seams. This practice probably contributed to the acid tone of his great film reviews.

In my opinion, Shepard stood nearly next in a line for a Grandmaster Award from SFWA, and it’s a shame that his death renders him ineligible. But the lack of a citation does not diminish the oeuvre, and that will stand the test of time.

One of Shepard’s early stories, “The Man who Painted the Dragon Griaule,” from 1984, launched a small series of tales, which were eventually gathered up in an omnibus in 2012, *The Dragon Griaule*. They remain among Shepard’s most famous and beloved productions. The core conceit is simple yet brilliant. An enormous dragon over a mile long and proportionately bulky lies on the landscape, seemingly comatose: Tolkien’s Smaug rejiggered. Over the centuries Griaule has become covered with earth and plants, and settlements dot his hide and lie within his shadow. But Griaule is sentient and conscious to some degree, and exerts his telepathic will on the pitiful humans that throng around him.

Given such an exotic setting and premise—which no one except the ever-perceptive Damien Broderick, in his volume *Unleashing the Strange: Twenty-First Century Science Fiction Literature*, seems to have explicitly noticed as being a forerunner of the whole New Weird genre—the possibilities for story-telling were endless. And with what might very well prove to be his final book, Shepard now devotes a whole novel to the scenario.

Beautiful Blood (hardcover, \$40.00, 296 pages, ISBN 978-1-59606-652-6) centers around a young, idealistic, but ultimately amoral medical man and scientist named Richard Rosacher (a name that deftly conjures up both the multiplicity of Rorschach blot meaningfulness, and the self-torments of Sacher-Masoch). Poverty-stricken and dedicated to research, Rosacher lives in the grungiest district of Teocinte, the shambolic city clustered alongside Griaule. Intent on draining fresh golden blood from the beast, at some peril, Rosacher receives an accidental injection of the potent stuff and discovers it's a drug that gives a benign high whereby mundane life and its objects acquire a supernal glow of beauty. (And I'm sure Shepard had in mind the similar riff that propels Jack Vance's *The Eyes of the Overworld*.) From this point on, Rosacher's life warps along avaricious semi-criminal lines. He becomes a Machiavellian drug lord, whose interpersonal relations take a back seat to his dreams of conquest. He seems to have attained the pinnacle of a certain kind of worldly success. But then again, there are these strange lacunae in his brain and memories, and a weird destiny that Griaule seems to have in mind for him. . . .

I do not think Shepard has ever written sentences that are more beautiful and potent, yet which lack the typical burden of his sometimes over-ornate and arch rococo burnishments. It's as if he deliberately pared his language down to almost fairy-tale purity. "Full darkness had fallen—the windowpanes like black semaphore flags salted with a message of stars." You'll find multiple sentences of such simple gorgeousness on every page. They conduce toward a hypnotic, headlong reading.

But what further cements the fable-like nature of the tale is its timespan, its magnitude, its encompassing of one man's entire life-arc, from callow youth to elderly survivor. Rosacher's life is full of miracles and magic, disappointments and triumphs, hollow victories and instructive defeats. The fascinating people who pass through his orbit are both very real and

idiosyncratic, and yet also just tools to his dominant nature. And the world through which Rosacher moves (a world that startlingly intersects our consensus history), contoured everywhere, even at a distance, by Griaule, is rendered as vibrant and colorful and tangible as any of the great subcreations of fantastika, from *Dune* to *New Crobuzon*. Shepard exhibits a deep wisdom in this volume about how one's life may go astray and be recovered multiple times, all the true and false paths weaving the full tapestry of an existence.

It's tempting in the light of Shepard's death to regard this late book as some kind of final testament, a cryptic and emblematic assessment of his own life to some degree. The arc of bright promise, self-betrayal, redemption, and solace. And I would not deny the truth of that, on some level. But paramount above all is not autobiography but his artist's insight into the nature of living, and his supreme ability to turn that existential insight into a myth that enriches the reader.

Have a Nice Next Life— If You Aren't Killed Again

Recently, when I should have been working, I was instead browsing the Internet Archive for old public domain books of interest. What did I find but a charming proto-SF title from 1903, *The Certainty of a Future Life in Mars*, by one L.P. Gratacap. The premise of the book was simple, if decidedly loony: after death, all human souls reappear on Mars, to commence a new interplanetary existence.

Recently, when writing about John Shirley's latest book in this space, I spoke of the "posthumous fantasy" genre. But I don't think the Gratacap book is exactly an example of that. Its insistence that its text is describing a new quasi-scientific discovery of how the Universe actually works places it firmly in the SF mode. Think of the way Philip Jose Farmer's *Riverworld* series reads differently from Will Self's *How the Dead Live*.

Now comes a thrilling debut novel along these same ancient speculative lines, David Edison's *The Waking Engine*

(Tor Books, hardcover, \$25.99, 400 pages, ISBN 978-0765334862). It's rigorous and vigorous, hot-blooded and philosophical, louche and elegant. In a sense it's a lapidary portal fantasy where the portal is death.

Our hero is a somewhat schlubby fellow named Cooper. We first fasten upon him when he awakes perplexed on a cold hillside (shades of Keats), and finds himself being roughly examined by two strangers. They summarily knock him unconscious, and he comes to again in the City Unspoken, a ramshackle, festering, labyrinthine, heterogeneous sump of humanity and other sophonts. One of his captor-guides named Asher gives him the lowdown. He has been delivered to this new world by the simple process of dying. Every individual in the multiverse, you see, gets born once the natural, uterine way. But then the first death and all subsequent deaths are really other births across the dimensions to one world or another where the "dead" person is karmically drawn and reinstantiated for a new

round of existence. Ring in some of the weird ambiance of *A Voyage to Arcturus*.

Edison conjures up a bevy of dangerous, unforgettable characters and bops around among their POVs, granting us access to a number of distinct venues. His chief baddie, the Cicatrix, is delightfully rancid, a cyborg madwoman. The physics and customs of the Unspoken City prove a van Vogtian tangle that hovers bemusedly twixt utter lucidity and utter incomprehensibility. It's everything a lover of fantastika could want.

I'd bet that Edison is a fan of Tanith Lee's lush hothouse prose and sensibilities. But the real template here has to be Stephen R. Donaldson's *Covenant* books. Like *Covenant*, Cooper is a doubter, a bit of a masochist and a screw-up. Reluctant to believe, reluctant to act, conflicted and stubborn, a ping-pong ball between warring parties, he must be scarified and annealed by torments before he comes into his own costly victory. Edison proves that such an antihero is vastly more alluring than just another Conanesque lunkhead. ○

TWENTY-NINTH ANNUAL READERS' AWARD

Once again it's time for our Readers' Award poll, which is now in its twenty-ninth year.

Please vote. Even if you've voted before, please peruse this page before filling in your ballot. **You'll find we've added a couple of new notes this year.** For those of you who are new to this, we should explain a few things.

We consider this to be our yearly chance to hear from *you*, the readers of the magazine. That's the whole point behind this award. What were *your* favorite short stories novellas, novelettes, poems, and covers from *Asimov's Science Fiction* last year? Just take a moment to look over the Index of the tales published in last year's issues of *Asimov's* (pp.109-111) to refresh your memory, and then list below, in the order of your preference, your three favorites in each category. By the way, we love to get comments about the stories and the magazine, so please free to include them with your ballot. **Please note: unless you request otherwise, comments will be considered for publication with attribution in the editorial that accompanies the announcement of the Readers' Award Results.**

Some cautions: Only material from 2014-dated issues of *Asimov's* is eligible. **Each reader gets one vote, and only one vote.** If you use a photocopy of the ballot, please be sure to include your name and address; your ballot won't be counted otherwise.

Works must also be categorized on the ballot as they appear in the **Index**. No matter what category you think a particular story ought to appear in, we consider the Index to be the ultimate authority in this regard, so be sure to check your ballots against the Index if there is any question about which category is the appropriate one for any particular story. All ballots must be postmarked no later than **February 1, 2015**, and should be addressed to: **Readers' Award, *Asimov's Science Fiction*, Dell Magazines, 267 Broadway, 4th Flr., New York, NY. 10007.** You can also vote online at asimovssf@dellmagazines.com, but you must give us your physical mailing address as well. We will also post online ballots at our website, so please check us out at www.asimovs.com.

Remember, *you*—the readers—will be the only judges for this award. In the past, some categories have been hotly contended, with victory or defeat riding on only one or two votes, so every vote counts. Don't let it be *your* vote for *your* favorite stories that goes uncounted! So don't put it off—vote today!

And, if *Asimov's* stories were among your picks for the very best tales of the year, and you are eligible to do so, please remember to nominate them for the Hugo Awards as well. Like the Readers' Awards, nominating for the Hugos gives you a great opportunity to recognize your favorite works!

BEST NOVELLA:

1. _____
2. _____
3. _____

BEST NOVELETTE:

1. _____
2. _____
3. _____

BEST SHORT STORY:

1. _____
2. _____
3. _____

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1. _____
2. _____
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BEST COVER:

1. _____
2. _____
3. _____

NAME: _____

ADDRESS: _____

SIGNATURE: _____

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Asimov's is moving. If you don't vote until January, please
check the February 2015 issue for the new address.
Continue to use our 267 Broadway address until then.

SF CONVENTIONAL CALENDAR

The traditional post-Thanksgiving lull seems to be starting a week late nowadays. Before then, get to LosCon or ChamBanaCon. Later, all of the Martin Luther King Jr. Day (January 19) weekend cons look good. Plan now for social weekends with your favorite SF authors, editors, artists, and fellow fans. For an explanation of our con(vention)s, a sample of SF folksongs, and info on fanzines and clubs, send me an SASE (self-addressed, stamped #10 [business] envelope) at 10 Hill #22-L, Newark NJ 07102. The hot line is (973) 242-5999. If a machine answers (with a list of the week's cons), leave a message and I'll call back on my nickel. When writing cons, send an SASE. For free listings, tell me of your con five months out. Look for me at cons behind the Filthy Pierre badge, playing a musical keyboard.

—Erwin S. Strauss

NOVEMBER 2014

28–30—LosCon. For info, write: c/o LASFaS, 6012 Tyrone Ave., Van Nuys CA 91401. Or phone: (973) 242-5999 (10 a.m. to 10 p.m., not collect). (Web) www.loscon.org. (E-mail) info@loscon.org. Con will be held in: Los Angeles CA (if city omitted, same as in address) at the LAX Marriott. Guests will include: J. Michael Straczynski (Babylon 5), artist Richard Hescox, fans Shawn & Colleen Crosby.

28–30—ChamBanaCon. (317) 258-1182. www.chambanacon.org. Holiday Inn, Urbana IL. Jan and S. M. Stirling. Low-key relax-a-con.

28–30—ChessieCon. www.chessiecon.org. Baltimore North Plaza, Timonium MD. Tamora Pierce, Katherine Kurtz, musician Tom Smith.

28–30—StarBase Indy. www.starbaseindy.com. Marriott East, Indianapolis IN. David Nykl. Star Wars, DS9, SG-1 and Babylon 5.

28–30—Chicago Tardis. www.chicagotardis.com. Westin, Lombard IL. Billie Piper, Nicholas Briggs, Camille Coduri. Doctor Who.

29—Anime Day. www.atlanta.animateday.net. Wyndham Galleria, Atlanta GA. Anime.

DECEMBER 2014

5–7—SMOFCon. www.smofcon32.org. Marriott, Manhattan Beach (Los Angeles) CA. Convention organizers meet to talk shop.

5–7—MidWest FurFest. www.furfest.org. Hyatt, Rosemont (Chicago) IL. Nick & Lacy of fursuiting.com. Anthropomorphics (furrles).

5–7—DerpyCon. www.derpycon.com. Hyatt, Morristown NJ. Michelle Knotz, Kira Buckland, Uncle Yo, NerdFit Network. Anime.

5–7—YamaCon. www.yamacon.org. LeConte Center, Pigeon Forge TN. Johnny Yong Bosch, L. Ballantyne (Sailor Moon, etc., voice). Anime.

6–8—Spain National SF, Fantasy and Horror Con. www.urani.com. Barcelona Spain. Nina Allan, Ailette de Bodard, Christopher Priest.

12–14—Anime Festival. www.arkansasanimefestival.com. Holiday Inn Conv. Center, Springdale AR. Musicians K. Oda, H. Matsushige.

13—Fezziwig's Ball. www.vintagedancers.org. Old Town Hall, Salem (Boston) MA. Christmas party, as in "A Christmas Carol" (Dickens).

JANUARY 2015

2–4—KollisionCon. www.kollisioncon.com. Hyatt, Rosemont (Chicago) IL. Paul St. Peter, Robert Axelrod. Anime, comics, cosplay, gaming.

2–4—IkkiCon. www.ikkicon.com. Hilton Austin, Austin TX. Guests to be announced. Japanese animation and pop culture.

4—Brass Ring Academy and Cabaret. www.brassringct.com. Carousel Museum, Bristol CT. Steampunk and Victoriana. Performances.

9–11—IlogiCon. www.ilogicon.org. Embassy Suites, Cary NC. Natania Barron, Ada M. Brown, Betty Cross, Tony Daniel, many more.

9–11—GAFilk. www.gafilk.org. Crowne Plaza Airport, Atlanta GA. S. J. (Sooj) Tucker. SF, fantasy and horror folksinging.

9–11—Anime Los Angeles. www.animelosangeles.org. LAX Marriott, Los Angeles CA. Tadao Tomomatsu. Anime.

16–18—ConFusion, Box 8284, Ann Arbor MI 48107. www.confusionsf.org. Dearborn (Detroit) MI. Karen Lord, Heather Dale.

16–18—RustyCon, Box 27075, Seattle WA 98165. www.rustycon.com. SeaTac Marriott. Freeman Dyson, Tim Zahn, T. Froud, D. Owens.

16–18—MarsCon. www.marscon.net. Fort Magruder Hotel, Williamsburg VA. David Weber, Kathryn Kurtz, David B. Coe, D. B. Jackson.

16–19—Arisia, 561 Windsor, Somerville MA 02143. www.arisia.org. Westin Waterfront, Boston MA. N. K. Jemisin, L. Moyer, Fozard.

30–Feb. 1—ChattaCon, Box 23908, Chattanooga TN 37422. www.chattacon.org. Choo Choo Hotel, Chattanooga TN. Julie Czerneda.

30–Feb. 1—Foolsap, c/o Box 31891, Seattle WA 98103. www.foolsapcon.org. Redmond WA. SF and fantasy literature, and art.

30–Feb. 1—ConFlikt. www.conflikt.org. SeaTac Hilton, Seattle WA. Cecelia Eng, Toyboat. SF, fantasy and horror folksinging.

FEBRUARY 2015

6–8—Potlatch, c/o Linda Deneroff, 11300 1st Ave NE, Seattle, WA 98125. www.potlatch-sf.org. Hotel Deca. Literary speculative fiction.

6–16—Boston SF Film Festival and Marathon. www.bostonsci-fi.com. Somerville Theatre, Somerville (Boston) MA.

AUGUST 2015

19–23—Sasquan, PMB 208, 15127 Main St. E., Suite 104, Sumner WA 98390. www.sasquan.org. Spokane WA. Gerrold. WorldCon. \$190.

AUGUST 2016

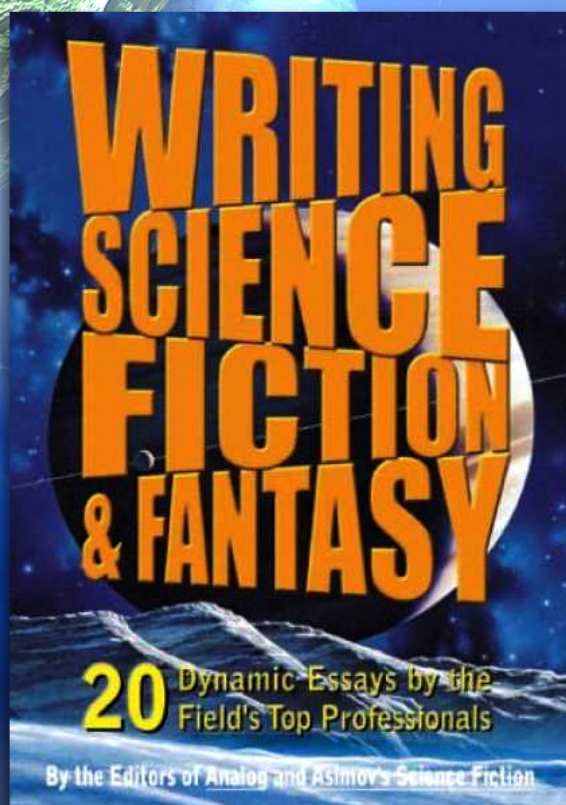
17–21—MidAmeriCon II. www.midamericon2.org. Convention Center and Bartle Hall, Kansas City MO. Kinuko Y. Craft. WorldCon. \$150.

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